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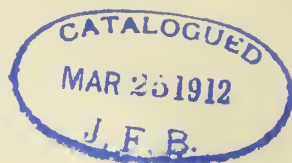
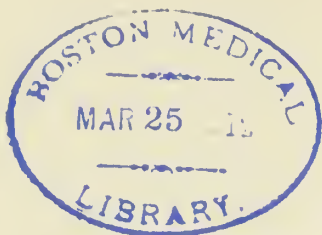
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No. 1

ORIGINAL ARTICLES

THE FUTURE OF MEDICINE.*

CHARLES G. STOCKTON, M.D.

BUFFALO, N. Y.

The topic of these remarks was suggested in a recent personal letter from a physician of Boston, as one suited to an occasion like this. The questions that are raised are familiar subjects of discussion between physicians. They receive the consideration of medical societies, editorial attention in journals, and they concern the sociologist as much as they do the physician. Perhaps the best way to introduce the matter is to present this recent instance, for although other examples crowd about us, this particular one was the source of the discussion that led to the writing of this paper.

The Boston Medical Society has issued the following appeal, from which I abstract the greater portion.

To the Superintendents and Trustees of the Various Hospitals of Boston:

WHEREAS, The dispensary evil, or indiscriminate medical charity, in all the hospitals, clinics and dispensaries of Boston, is being intensified and aggravated from year to year.

WHEREAS, Large numbers of patients suffering from chronic diseases, acute illnesses and minor surgical injuries, undoubtedly able to pay a fee of some kind to a private physician or surgeon, are daily accepted and treated without adequate question or investigation as to their prosperity or pauperism, practically entirely free of charge.

WHEREAS, It has become a widespread habit of thought, wholly or largely because information or instruction to the contrary at the hospitals and clinics has never been systematically and officially given out, that any case of surgery or minor surgery can only be properly treated at some hospital or dispensary, thus depriving all ordinary private physicians and surgeons of a class of cases in the community which they have justly anticipated would come to their offices for treatment.

* Oration in Medicine, delivered at the annual meeting of the Illinois State Medical Society in Danville, May 18, 1910.

WHEREAS, The friendly and mutually advantageous relationships between the general practitioner and the consultant and specialist are often frustrated by the promiscuous, gratuitous services given by the latter at the ever-increasingly popular clinics.

WHEREAS, The "district physicians" sent out from the Boston Dispensary (who disclaim being city doctors), with their assistant nurses, have their headquarters at reliable druggists, and who give their services free, exemplify a form of medical practice which at times the ordinary practitioner has to compete with at a disadvantage.

WHEREAS, The Boston Lying-In Hospital, with its present monopolistic policy of accepting cases of obstetrics at rates and with facilities which defy all competition on the part of the private physician, excluding as it does nearly all impecunious cases and taking in practically only those well able to pay, constitute a hardship and an ethical wrong not easy of acceptance to the medical profession.

WHEREAS, The present unfair and inequitable system in vogue at the Massachusetts General Hospital, the Boston City Hospital and the relief stations, the Infants' Hospital on Blossom Street, the Boston Dispensary, the Lying-in Hospital, the Carney Hospital and many other clinics, of accepting daily large numbers of patients of all kinds and without seemingly sufficient discrimination, renders it extremely difficult if not impossible for the average practitioner to successfully obtain even a fair living practice, in competition with these influential institutions, the charters of which were granted to them in the interest of charity for the worthy poor.

Resolved, That the general policy of the hospitals, dispensaries and medical institutions, both public and semi-private, fails at the present time to recognize the principles and sources of professional existence, ordinary medical *esprit de corps*, or even the square deal, thereby inculcating in the minds of the laity a lack of confidence in the abilities of the ordinary private practitioner and a disrespect for his methods of practicing the art of medicine, and monopolizing and injuring the legitimate opportunities in the community of the private practice of medicine and surgery.

Resolved, That these resolutions be sent to the several hospitals and dispensaries of Boston, with the request that hearings be given by the trustees, superintendents and hospital staffs on the general subject.

We all know that the statements made in this letter are true, or, if not so in Boston, the general facts are true in many other cities. The profession of medicine having found it necessary to educate the public as to the problems of disease, the general public has, to a considerable extent, associated itself with physicians in combating the same. The movement of the American Medical Association seeking to enlist the interest and assistance of the laity in disseminating through organized efforts a knowledge of public and personal hygiene, under the guidance of a special committee, may be cited as one of the forces at work in stimulating communities to unite with physicians in preventing and managing disease. Consciously and unconsciously, we have been arousing the public to the realization of a great civic and humanitarian duty; we have shown foresight in pointing out the stupidity and the wastefulness of permitting recognized causes of preventable diseases to go unchecked. Daily encounter with helpless suffering stimulated us to demand the establishment of hospitals and varied institutions for the relief of the poor. We have justly insisted upon the necessity of these for the comparative study of disease and for providing the most economical means of relief. We have sought

the advice and financial support of the community and have gained this through continued educational efforts. We are rewarded in some degree for our labor, and a more general response to our active propaganda is most probable. Never before has there been displayed such a widespread interest in matters of public health, and results are sprouting out in new and perhaps unexpected directions. We are seeing upon every hand the creation of tuberculosis camps and clinics; hospitals for incipient cases and for advanced cases. In the cities there is an increasing number of milk-distributing stations with free teaching and advice by salaried physicians for the prevention and treatment of sick children. One of the most interesting and important developments in late years is a social service department connected with the great hospitals and other charities by means of which the unfortunate and ignorant are shown the path to healthful and happier lives. In many places there are school physicians whose service, if carefully performed, is certain to result in the decrease of contagious diseases and in correcting disability in children before disease has become thoroughly established in them. Tenement-house inspection and social settlement work are spreading, public play-grounds are provided and the necessity of pure air insisted upon. In a similar spirit school nurses are employed; in railway stations and various terminals nurses are coming to be a necessary addition to the force, and these nurses are in close touch with hospitals and relief stations which look out for unfortunate travelers. Great department stores, great factories employ their physicians and nurses, and we are now hearing of steps taken by insurance companies to instruct their assured as to the best manner to avoid illness and injury. In some instances nurses are supplied free by the companies for the benefit of the policy holders. We may foresee that in the near future expert physicians will be employed by companies in a similar function. An association insuring people of small incomes against sickness and disability has recently proposed to employ a group of expert physicians who should take charge of the policy holders during illness. The physicians are to be well paid by the company and the latter expects to be largely the gainer through the shortening of the period of illness and avoidance of malingering.

Within the recollection of some men present the insane were cared for in prisons or at home under the charge of the family physician and the practical nurse. To-day sufferers from mental diseases are practically all cared for in institutions, and for the most part these are provided by the state or municipality. We find that the cities are now building well-equipped hospitals for contagious diseases, and the majority of patients in these institutions are cared for by the physician in charge of the hospital. This results not only in economy in nursing, isolation, etc., and prevents the spread of disease, but materially lessens the occupation of the family physician. Besides, there are growing up psychopathic institutions, hospitals for the neurasthenic, which are practically free for those who are supposed to be indigent.

The state has provided gratuitously antitoxin serum for the treatment of diphtheria, serum for the treatment of rabies, and most likely it will

soon provide sera for the treatment of various forms of meningitis and other preparations for the benefit of those who need potent and reliable means of combating terrific diseases. In the State of New York a bill has been introduced in the legislature asking for the gratuitous providing to midwives and physicians of preparations for the prevention of ophthalmia neonatorum. The object, of course, is to do away with a large number of blind, the majority of whom lose their vision through this preventable disease.

I must not catalogue the increasing number of movements springing up on every hand for the education of the people in the matter of hygiene for the prevention of disease, and offering assistance to those seeking restoration of health. Not one of this group fails in its humane purpose. There is scarcely one that physicians would not approve of, and yet the effect of all this upon the work and income of the average family physician is a matter worthy of the deepest consideration. To a different class from the institutions just cited belongs the work of the lodge doctor, the contract physician, those who care for the sick and injured in mines and factories, railroads, etc., and at salaries pitifully small compared with the number of patients seen, the responsibility assumed and the arduous work done. The practice of such men we have regarded as distinctly antagonistic to the welfare of all concerned. In some form this is likely to continue, but surely the service should be improved and the physicians better paid. Somewhat analogous is the work of the city district physicians who are appointed through political influence and who are supposed to care for the poor without charge. Such physicians should be civil service appointees and should be adequately compensated. It seems to me proper to place this group in a class by itself in our consideration of this subject.

Let us see where this is leading us. For instance, consider the ludicrous position of the doctors of a certain great city, who for a decade have been fighting to obtain a pure water supply in order that typhoid fever might be eradicated from their midst. At last the pure water supply has become a reality and typhoid fever has disappeared, with the result that a numerous group of physicians who depended largely upon typhoid for their income are ruined.

This is not a problem confined to America, for, as it is the legitimate offspring of science and enlightenment, it follows that the problem confronts the profession of Europe as well as America. In England, where modern ideas of sanitation have proceeded farther, the pinch is more keenly felt than here, and the journals bear testimony to the evident embarrassment felt by the general practitioner in his effort to support his family and maintain his position.

Another line of thought must be considered here. To-day a man finds himself incompetent to practice his profession without long training, a probational period in hospital life and opportunities placing him in touch with well-equipped laboratories and clinics in order that he may be in accord with the changing conception of pathology and novel methods of technique. The days of the "saddle bags" and the "medicine shelf" have disappeared, in place of which the physician must have his micro-

scope, his incubator and his chemical reagents. He must provide himself with an easy access to the *x*-ray apparatus, and he must combine in himself the art of the expert mechanic, the physicist, the chemist, and the technician without losing one iota of his clinical sense and judgment. In short, the requirements of the modern physician are increasing in an inverse ratio with the number of patients and the sources of income; and this at a time when the world is demanding more expensive necessities of life which the physician cannot dispense with if he is to maintain his position and move with the current of the time.

It is obvious that a man cannot do everything in one short life, and so our investigations and practice are distributed along lines that are becoming more and more special. We are dividing more our work and are uniting more our counsel, and in this fact will be found one of the causes that are turning people towards hospitals and public clinics. It is even now unusual for a diagnostician to satisfy himself on all sides of a complicated case without calling to his assistance the special knowledge of one or more of his colleagues. He may require blood cultures or urine examinations that involve proficiency in organic chemistry, or he may desire the opinion of a surgical colleague. The well-to-do should pay for each and all of these examinations, whatever may be necessary, but such a course is impracticable for people of small means, yet upon going into a hospital they are able to receive an opinion made more valuable because of more complete study, and this without a charge that is prohibitive. I can readily understand how this course is for the best interest of persons of small means, but also it is apparent that it curtails the income of physicians. It is well enough to say that a young man must develop himself for higher work or perfect himself in some special subject, but such a course will eventually fail without opportunity for practice.

A physician cannot avail himself of the possibilities that outreaching science holds in store without means of support. With most of us the available means of support are to be found in our work and there only, and if a large proportion of the work is to be carried on by hospitals, dispensaries, and a sort of impersonal physician employed by insurance companies, workshops and various altruistic organizations, we must ask ourselves seriously how are we to survive in the future, how successfully to keep pace with these competitors of our own creating? It will not do to say that this is a passing social phase, and that it will soon disappear, for if we examine the situation critically we shall discover that these problems are evidences of a social revolution that is only fairly begun, that will inevitably continue with growing momentum until a great bulk of disability will be treated in institutions, or by experts who occupy a semi-official position, similar to those hitherto mentioned. Silently and swiftly this movement is going on by the unconscious help and furtherance of many physicians who to-day may deny its very existence; and it appears that the development of which the Boston Medical Society now complains is merely a foretaste of what the future has in store for us.

Does this imply that the private physician, "the doctor," in the sense in which for centuries he has been regarded, is to disappear from the community? In my judgment the answer must be decidedly in the negative. Individualism in medicine is absolutely necessary, and without the private worker it is likely that the very framework of medicine would be weakened. Not only will there be the private physician, but he will be better, more effectual than the physician of to-day. Possibly physicians will be fewer in number. This may depend in part upon the increased expenditure of time and money in fitting for the work, and perhaps upon the reason that there will not remain a sufficiently wide clientele for the present large proportion of private practitioners. However, this is by no manner of means sure. All of these new movements in the semi-public method of dealing with the problems of disease will require the intelligence and the service of a large number of workers. The field of labor must be greatly widened, for although, from prevention, illness will be made to decrease, this can only be effected through the application of preventive medicine in its widest sense. Such matters as pure water and food supply, ventilation, recreation, exercise, etc., may be carried on without great demands upon the time of the physician, but it is evident that other fields will open in which work must be conducted by highly trained and discriminating professional men. For it will be admitted that new causes of disease are increasing with the disappearance of old causes like, for instance, infected drinking water. We need not look far to discover modern breeders of disability. Life is becoming steadily more complicated and strenuous. Hurry, lack of rest and systemic strain, pressure in modern education and social exactions are sure to produce their victims. Besides this there is a growing tendency to discover and present for needed treatment a goodly number of unphysiologic conditions that hitherto have largely escaped notice, such as weak feet, crooked spines, adenoids, eye-strain, and mental peculiarities; also expertness in the use of the increasing number of instruments of precision and the rapid extension of laboratory work are certain to open new and wide fields for the employment of the physician.

It therefore seems that the occupation of the physician will not cease because of the disappearance of disease from the planet, and merely in the intelligent prevention of these affections there of necessity will be found a place for the activity of the best minds. When we subject the matter to close examination it appears that we are in the rapids of an extraordinary social change, and that in order to navigate safely we must change our methods, but not our calling. It is to be hoped that we shall be more occupied in the prevention than in the cure of disease, and it is doubtful if we shall have less occupation or be more poorly compensated. The times are changing, and therefore we must change, for experience teaches that the man who is out of harmony with the spirit of his times is inevitably left behind and forgotten. In all the history of medicine the place of the doctor has undergone little variation, but we have not before come upon times like these, and in dealing with the new economic problems which are presenting themselves we must be foresighted and

prepared, whereupon we shall have the satisfaction of contributing largely to the welfare of the race, of enjoying the reward of usefulness, and of close relationship with principles of the deepest interest.

The profession of law has undergone a transformation within the last quarter of a century. The old-fashioned lawyer is now rarely seen, for he has been succeeded by the modern lawyer-business man who deals with affairs from a different standpoint than did his predecessor. While this transition was in process many good lawyers of the old school found themselves outdistanced by the more progressive and business-like men who more quickly adapted themselves to the changing relations. It is not unlikely that some of us shall suffer in much the same way.

No one can look upon the present situation without a feeling of sadness. There is an increase in the profession of relatively highly trained men who are finding it impossible to achieve a competency in practice. At the same time many who are well established feel themselves encroached upon, pushed into narrower and narrower straits.

With all great social changes there are borne forward on the wave of popularity new desires, new necessities and new preoccupations, while old, valuable, and even sacred ideals disappear as in the hollow of the sea. So it was in the Augustan age at Rome, in the decay of the ancient régime in France, and as we now see it in the extraordinary evolution in China, where at present there is unfolding a more miraculous and sudden transformation of the ideals and customs of a people than is elsewhere recorded in history. We may imagine a day when some Chinaman, wearing the habiliments common to Hongkong and Manchester, standing upon the holy mountain of Confucius, shall gaze with sad, regretful eyes across that vast expanse, the ancient realm of China, while the ghosts of countless ancestors weigh down his understanding and point backward to a thousand endcared and revered institutions disappearing in oblivion. It is natural to regret old and dying customs; to wipe out an honored tradition is to injure confidence in realities, unless the old is replaced by a doctrine that is manifestly uplifting to civilization. In the further working out of this problem of ours we are destined to suffer the loss of some of our professional characteristics, but we shall achieve new ones. We are likely to recall with regret some of the abandoned prerogatives of the earlier days, but indifferent to our sentiments, the further working out of the genius of modern civilization is inevitable, quite regardless of the benefits or hardships that will ensue. "Such is the eternal law of life, ceaselessly transforming good into evil and evil into good." (G. Ferrero.)

In view of what has been said, what should be the attitude of our profession toward this question? We can do one of three things: First, help it on, as many are doing; second, oppose it, which is being done by some; third, we may look on. Of the first, that of lending assistance, it appears to be the natural and progressive course. We shall be drawn more and more in its wake until it comes to be the accepted creed of medicine. There never has been a time when our profession has not stood for the good of the race. When individual members have lost sight

of this fact they have sloughed off from the proper body of the profession. The prospective change in relations will be difficult for some men who may not have the natural aptitude for the new undertakings, and for those who are too old or too weak to undergo the strain of the transition. It is to be hoped that those who elect to be onlookers will observe with the spirit of philosophers and leave for posterity an illuminated record of this remoulding of the profession.

Those who choose to oppose the movement may be warmed by a sentiment of loyalty to time-honored conditions and may never realize their defeat. It is often so with certain temperaments, as has been exemplified so often in religion and politics. It is said of certain men that they still believe that Thomas Jefferson is living.

It would seem to be a wiser plan deliberately to cooperate with the movement, to curb its rank and unintelligent exuberance where we may, to cement in a lasting foundation that which is undeniably good. To this end it is necessary now, more than ever before, for the physician to interest himself in sociology as well as pathology, and thus to create for himself a larger place, more amplitude of vision, a wider interest, and the means of subsistence. There must necessarily be a demand for our special training, and it will probably be found that we shall have no less active occupation when we shall have adapted ourselves to these new requirements of a contending civilization.

It is highly probable that the aroused public interest in the subject of medicine will result in a much more enlightened laity than we have previously known. Many diseases may be prevented, or their on-coming foreseen, so that the physician will have more opportunity for treating the patient rather than the disease. The great question of heredity may eventually receive discriminating attention. But long before this it is probable that methods will be found more economical in suffering and expense than is at present true in the management of a large proportion of crippled and neurasthenic, of inebriates and others who now encumber society. But even though this tendency of the semi-public treatment of disease appears to be temporarily an obstruction to the profession, even though in some respects it is found to be inimical to our interest and destructive to the welfare of the laity, it is sure in the course of events to right itself, leaving for us a residuum of good, as has always been true in the annals of medicine.

This movement is now on trial. That portion of it that proves to be for the best interest of all will survive and expand as have other innovations in the past. In conforming with new ideals we shall not be doing the unprecedented in our history. For instance, certain schools that in the past have agitated the placid surface of self-satisfaction really forced themselves upon our attention. These we resisted until whatever truths they concealed were disclosed, whereupon we embraced the kernels of truth and we have survived to see the disappearance of so-called heresies, for an idea ceases to be heretical when its truth is discovered.

In this way we have come to know the facts of small medication, of psychotherapy, of balneology, and of medical gymnastics. We have been

not harmed but helped by these vicissitudes, not weakened but strengthened. It is the happy lot of medicine that it stands for truth wherever it may lead, and hence it is safe. Time and experience see the expiring error leaving a small fruitage of reality, all that was borne from the exuberance of stalk. Therefore we need not worry about the future in medicine. Whatever in this new tendency may prove to be wise and economical we shall adopt and practice. Ultimately much of it may be left in oblivion, but not until it has been tested by a far wider application than we have yet seen. Meantime those who insist upon the survival of old privileges will meet with what appears to be an ungrateful opposition, and, what is saddening to reflect upon, many worthy men will find the later years of life unduly cramped.

Always the fear of poverty and dissolution results in timid action and inhibits success. Therefore let us meet this new problem with the spirit of true philosophy. I admire this passage from Montaigne: "A true conquest respecteth rather an undaunted resolution, an honorable end, than a fair escape; and the honor of virtue doth more consist in *combating* than in *beating*."

Therefore, instead of emphasizing our privileges and asserting too loudly our rights, let us rearrange our molecules and push on. Then we are likely to rise to a higher plane of usefulness and greater satisfaction. This will not come by attempting to obscure the dawn of better things, but by helping to dispel the mists, making more clear the light in which civilization must journey towards truth.

ON CANCER.*

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My first duty is to acknowledge, with my best thanks, the great honor you have conferred in inviting me to deliver the address in Surgery before the Annual Meeting of a Medical Society of which it can be truly said that no other in the whole land has greater prestige and distinction.

There is no disease which has so completely baffled medicine, and so mercilessly tortured the human race, as cancer. While neither the cause of cancer nor its cure has been found, great progress has been made by disproving many false theories; by discrediting many empiric cures; by making more complete studies of its distribution in the various races of man under the various conditions of life; by determining its incidence in the lower animals; by a more complete study of its predisposing causes, its method of growth, the changes in metabolism of its host; by the establishment of the fact of immunity in the spontaneous cures, and the effect of various physical and biochemical agents on its growth. Experimental cancer, being less resistant than spontaneous cancer, is

* Oration in Surgery delivered at the Annual Meeting of the Illinois State Medical Society, at Danville, May 18, 1910.

affected by extracts of various glandular tissue of the same or of other species; by the blood or serum of immune animals; by the x-ray, and by certain toxins. Of the agents that influence experimental cancer, none have as yet proven of sufficient value in human cancer to take the place of the treatment by excision. We will therefore accomplish nothing on this occasion by discussing the many theories proposed or to speculate on the discoveries that we hope will be made. There are two aspects of this question which we can discuss with a clear understanding. I refer to the curable stages, the pre-cancer stage, and the early stage in which the disease is still local.

The investigation of cancer is now so largely in the hands of men working along purely laboratory lines that it has come to be believed by some that only observations upon the lower animals are of scientific value. Now, the principal means thus far of attacking the problem in the laboratories is through observations upon transplantable tumors. In my own observations on transplantable tumors in animals (in comparison with the spontaneous cancers in man) it seemed clear to me that in at least one important respect we are dealing with a materially different problem. Transplantable cancers in animals must be nursed and coddled to make them grow. Who ever saw a human cancer that required any encouragement to make it grow? In animals there is meager opportunity for the study of the predisposing causes of cancer, the pre-cancer states. In man there is abundant opportunity for such study. Is there a pre-cancer state? If so, can it be recognized?

We may, I think, safely assume that cancer obeys some general law of growth, and that this law applies equally well whether it be cancer of the internal invisible organs or of the external and visible parts. If it can be shown that cancer of any particular part of the body follows a certain sequence of events, this would be an example of the law of its growth. It was not necessary for Sir Isaac Newton to observe the fall of apples from other trees to conceive the law of gravity.

Cancer of the skin of the human abdomen occurs with relative frequency only in Kashmir. The abdominal skin of these people has been frequently burned and irritated by the braziers they carry. Here we have conditions of value for drawing deductions. A vast proportion of the human race, say several hundred million under intelligent observation, in whom the skin of the abdomen has not been subjected to burning or irritation in this particular manner, show no cancer of the skin of the abdomen as compared with the relatively frequent incidence of cancer among the Kashmirs. What is the conclusion to be drawn from an experiment in Nature on so magnificent a scale? If this had been planned as an actual experiment, how remarkable would it seem to us, and how conclusive! None the less remarkable and none the less conclusive should it be because this gigantic natural experiment has been made for us. It was the interpretation of such vast phenomena in Nature that led Darwin to the theory of the origin of species. No case of cancer has, to my knowledge, been observed on the normal, uninjured skin of the arms, the legs, the back or the chest. But cancers have been observed on the

skin of all of these regions in scars from injuries and burns, especially following the latter, or on the parts of the skin subjected to frequently repeated trauma, or at the base of chronic ulcers, or from *x-ray* burns, or preexisting benign tumors. As to the skin of the face, the region par excellence for accurate observation, there is an opportunity for the study of the natural development of cancer of greater value than that of any possible laboratory condition.

On the human face, observed daily from birth by the most faithful and interested observers (those of the family circle) and, thanks to the mirror, by the patient himself, even the coming and going of a freckle would be as the visit of a comet. The superficial cancer of the skin of the face is always preceded by a pre-cancer stage, a keratosis, a mole or wart or tumor or ulcer. Never have I seen a cancer flash, fully formed, upon the healthy skin of the face. How frequently is the pre-cancer history a long one, little scales that were picked off as frequently as they returned; a wart that was by habit goaded by picking; there is always a benign pre-cancer history. How utterly impossible it is for the laboratory investigator to secure, at any cost, any such comprehensive display of the natural history of the cancer phenomena! Then, again, in cancer within the mouth, although the opportunity for accurate observation here is not so favorable as in that of the skin, we almost never see cancer in a sanitary mouth with normal teeth, in the absence of syphilis or leucoplakia, or warts, or fissures. In cancer of the buccal surface the question is not so much, is there a goading irritant, but, rather, what is the goading irritant? Again and again one sees the ragged tooth fitting into its cancer cup like the head of a bone into its socket. Again and again one hears the history of leucoplakia, fissure, wart, then cancer of the tongue. One does not think of melanomata excepting as the malignant sequence of a pigmented mole, and the death toll from this cause is by no means small. The pre-cancer stage is, in most instances, a remediable condition. Yet, how often has the physician, as well as the patient, been an interested spectator waiting to see whether the firebrand upon the roof will burn itself out or burn down the house. There is an unexplainable inertia with respect to the protection from cancer, an inertia that is strongly suggestive of the paralysis of fear of the bird in the presence of the serpent.

If, in the cancer period of life, every unhealthy scar were excised and the surface covered by skin grafting, every chronic irritation were removed, every ulcer healed soundly or excised and the surface covered by skin grafting, every wart and mole excised, every keratosis relieved and the mouth kept wholesome, the teeth smooth and even, it would be found that, without surgical mutilation and without the specter of fear, the cancer problem of this portion of the body would be measurably solved. Now, just as certain as every apple that ever fell obeyed the same law of gravity as the particular apple that gave to Newton the suggestion of the great law, so certain may we be that cancers of the invisible, inner regions of the body obey the same law as do the cancers of the skin. We may not assume, but conclude that internal cancers

have their pre-cancer stages, their chronic irritation, ulceration, benign growth stages. Of the larynx, the ulcer of syphilis and the papilloma; of the stomach, the chronic ulcer; of the gall bladder, the irritating gall stones and chronic inflammation; of the large intestines and rectum, the many ulcers and irritations; of the pelvis of the kidney, the irritating stones, and so on through the long list of pre-cancer states.

The pre-cancer stage in the stomach, gall bladder, intestines and uterus is, to a certain extent (though not in all as in the external parts of the body), amenable to treatment. The frequent incidence of cancer of the stomach is certainly another reason for disposing of the ulcer or the scar of the stomach. So, too, in diseases of the rectum, ulcers should be relieved, not alone on account of the discomfort they produce, but also because of their being a possible source of cancerous growth. Likewise, the presence of irritating calculi in various parts should always be regarded as at least a potential cancer. In benign tumors of the uterus, cancer appears in a higher percentage than in the normal uterus. This constitutes an added indication for the removal of tumors of the uterus.

In discussing cancer of the breast, Sampson Handley has recently made another notable contribution in offering further evidence as to the pre-cancer state in the form of chronic inflammation. This stage has been designated by different names by other observers.

The type to which Handley directed his attention is sometimes called Schimmelbusch's disease of the breast. From many sources we have corroborating evidence that cancer of the breast is a sequence of this pre-cancer stage. Since Warren introduced the method of approach to the breast, making the incision along its lower and external border in such a fashion that the entire breast may be turned up and any surface be freely inspected, many operations have been done for the protection of the breast from the dangers of the pre-cancer stage. I have many times performed this operation, frequently on both breasts. It is not necessary to excise the subcutaneous fat nor the nipple. Therefore a certain form of the breast remains and there is no visible scar. This procedure, therefore, renders the operation far less objectionable than the mutilating operation of total removal of the breast, leaving only a scar in its place. There is no part of the breast, whether the tumor be simple benign, multiple cystic or malignant, which may not be well exposed and sufficiently operated on by the Warren incision. Handley, however, is of the opinion that the use of the *x*-ray is extremely valuable in these cases of chronic mastitis. Should this prove to be true it would be a very simple matter to subject all breasts of this kind to *x*-ray treatment and thereby prevent many cases of cancer. From the very brief allusions we have made to the vast possibilities of the pre-cancer stage it will be seen that this subject demands the fullest consideration of the profession, and it will be further readily seen that a large number of cancers are, and a still greater number may be, prevented, which is of far more value, in my judgment, than to cure a cancer. Every one who operates upon cases of cancer realizes that, although a cure is made, there is left a mental

dread of the return of the disease, which results in a certain amount of disability.

We will discuss for a moment the curable or operative stage of existing cancer. This stage is very frequently encountered in cancer of the lip and cancer of the skin. It is less frequent in cancer of the mouth; least frequent in the internal organs. At the present time, thanks to the many successful cases, the public are beginning to understand that cancer of the breast is curable and many more patients now seek relief in the earlier stages. I am quite certain I am consulted by more women who fear they have cancer of the breast, but have none, than cases in which there is a cancer. I find that the breast cases are seeking advice earlier than, for example, ten years ago. I am occasionally appalled to find that the cause of the delay for early operation of cancer in various parts of the body is due not to the patient, but to the physician in charge. There are still some physicians who are unable to accept the surgical point of view as to cancer when it is in its early stages and are guilty of encouraging the delay that means despair.

Growing tumors, persistent ulcers, chronic indigestion and disturbances of internal organs in the cancer period of life should always be minutely investigated. No tumor should be watched to see whether it will take on the characteristics of cancer. It should be dealt with as a suspected or convicted cancer.

In cancer of the larynx I have operated on twenty cases. A careful study of the method of development and growth of these cases has led me to reach a wholly different conclusion than was formerly held, viz.: that in almost every case of the cancer of the larynx there has been ample warning. The cancer itself is usually preceded by papilloma or ulcer. It is during this period that the question should be settled and the pre-cancerous condition removed. A study of the mode of growth of the late stages of cancer of the larynx has shown that the cancer cells cannot invade the hyaline cartilage of the larynx. The cancer is boxed up and can only escape through the thyrohyoid membrane or through the top of the larynx. Then, too, the metastases usually occur late, and always in the accessible glands of the neck. Cancer of the larynx will some day, in my judgment, be found to be of the most curable type. Butlin and Semon have shown that in early cancer of the larynx, excellent results may be obtained by an intralaryngeal excision through a laryngotomy.

As to cancer of the internal organs, we have at the present time no method of reaching an accurate diagnosis in the very early stages. In cancer of the stomach, for example, there is no method that will indicate cancer unerringly until certain secondary changes have occurred.

So long as excision is the only method of cure, our only hope in cancer of the internal organs lies in the discovery of some specific test for cancer. In the course of transfusion experiments on animals with

transplantable sarcoma, in collaboration with Dr. Beebee, we observed hemolysis following transfusion.

Hemolysis.—The total number of cases of cancer now thus studied is three hundred and one. These cases occurring in private practice are quite easy to follow and have been favorable for study. As against the group of malignant cases, a much larger group of operative cases for a variety of lesions (such as tumors, gallstones, appendicitis, hernia) have also been studied. Here we have rarely seen any hemolysis, the only cases being those in which there has been infection, particularly chronic, and in two cases of neurasthenia without a real diagnosis. The technique must be carried out with the utmost care. In non-malignant surgical diseases, excepting tuberculosis, hemolysis is rare. In malignant diseases, hemolysis is relatively common. In advanced and inoperable cases it is more frequently absent than present, and when present is usually the reverse type.

In the earlier and surgically favorable period, especially in mucous membrane cancers, four out of five cases show hemolysis. In this class of cases the reaction is direct. It is at once apparent that the percentage of positive reaction depends upon the stage of the disease and the technique employed. In a home for incurable cancer cases one would not see many reactions, and those that do appear would be mostly reverse. In private practice a larger proportion of cases are seen early, hence a higher percentage of positive reactions. The further observations here recorded support the conclusions that hemolysis occurs in a number of conditions, but most frequently in cancer and tuberculosis. In the incurable stage of cancer, approximately 75 per cent. show a positive reaction; in the advanced stage there is either a reverse hemolysis or no hemolysis, the reverse appearing more frequently than no hemolysis; in the terminal stage there is usually no hemolysis, and only occasionally a reverse hemolysis. In active tuberculosis there is hemolysis in approximately 90 per cent. of the cases, and is always the reverse type.

The hemolytic test for cancer is not a specific test, but it offers valuable evidence of cancer. It is of value in estimating the prognosis; indeed, I have as yet seen no case of cancer cured by operation when a reverse hemolysis was observed.

On the Behavior of Skin Graft in Cancer Cases.—In the course of operation for cancer, especially in the advanced cases of breast cancer, so much skin is sometimes removed that grafting is desirable. As a rule, the grafts are autodermic, i. e., they are taken from the patient, but occasionally a husband or son will volunteer so strongly that grafts are taken from them, isodermic graft. Autodermic grafts, made by the highly perfected operative technique of the day, rarely ever fail. Indeed, success is counted upon. They take immediately and show no reaction. They cause no exudation of serum around their edges, nor do they cause any other local reaction. Infection almost never occurs.

In the past two years I have been following a quite accidental observation upon the difference in the behavior of autodermic and isodermic skin grafts. The value of these observations is much in doubt, as no one has as yet sufficiently investigated the behavior of autodermic and isodermic grafts in normal individuals.

I have now made observations on ten cases with respect to the behavior in cancer cases of the isodermic and autodermic grafts. I have, of course, heretofore made many observations on autodermic grafting. I have never known any pathologic interaction between an autodermic graft and the local tissue. But in taking grafts from another individual, isograft, and placing it upon the open wound remaining after a cancer was removed, the graft in the cancer cases behaved as follows: In some the graft grew normally; in others the graft either did not grow at all, or it grew for a time, then was cast off.

In each case both autografts and isografts were made. The autografts in every instance grew, so far as our observations have yet gone; the cases that rejected the isograft showed cancer growth in the body somewhere. Some observations were also made on autolysis of the skin of cancerous and non-cancerous individuals in the serum of each other. The histologic study of the rejected isografts and of the skin subjected to autolysis showed a marked degeneration of the deeper cells of the skin. This subject is mentioned on this occasion, not as a conclusion, but merely as an isolated phenomenon, with the hope that it will stimulate others to make observations along similar lines.

Could an accurate and simple test be found, it would then be a matter of testing every suspected case, and, if the reaction were positive, to proceed by processes of elimination until the location of the growth is found. Operations for cancer of the gall bladder, stomach and small intestines, while encouraging, must remain unsatisfactory until an adequate method of early diagnosis is discovered. In the large intestines, the growth being slow, the results are far more satisfactory. In operations on the rectum there is usually great discomfort and favorable conditions are difficult to obtain. In cancers of the fundus of the uterus the results are very good, indeed. In cancer of the cervix they are less favorable. There is a great underlying principle in operations for cancer, especially when there is ulceration, viz: Cancer may be engrafted upon the operative field. It has seemed to me that in no place, excepting possibly cancer of the tongue, has there been so much direct evidence of immediate implantation of cancer cells in the wound as in cancer of the cervix. There is, I believe, no other way of explaining the widespread growth in the operative scar excepting by the implantation of cancer cells at the time of operation. In the hands of inexperienced surgeons, in cases of cancer of the breast, I have seen a rapid growth of cancer through the entire operative field, the growth following directly after the operation. In these cases there is no question but that this is due to direct implantation. Every doubt as to the implantability of the cancer at

operation must be dispelled when cancer growth is seen in every stitch-hole. This could only have been done by the needle and thread carrying the cancer cells and distributing them in their course. It seems to me, therefore, a matter of the greatest importance to control completely as possible the field when operating upon an ulcerating cancer. Perhaps the best way is that of completely destroying the superficial surface by a thermo cautery. I am certain that I have seen better results since I have used the utmost care in preventing immediate implantation in the wound.

It is well to remember that experimental cancer has been transferred from one animal to another by rubbing cancer tissue on an abraded surface. The immediate operative implantation of cancer cells is apparently one of the great hazards of the operation.

There are many points which I am tempted to discuss, especially those relating to the operative technique and diagnosis, but I shall mention but one before closing. I refer to management of the extremely bad risks, such as starvation in pyloric obstruction, or of repeated hemorrhages producing a deep secondary anemia, as in cancer of the uterus. In the past two years I have lost not a single case from shock. This result was obtained by converting the desperately bad risk into a good one, prior to the operation, by a transfusion of blood, or if the operation is attempted and a dangerous shock develops, a transfusion is done during the operation or just after its completion. The use of nitrous oxid-oxygen anesthesia is also a great aid in bad risks. By these methods a complete operation may be done and practically no case lost by shock.

Based on the work of the experimentalist, the biologist, the internist and the surgeon, tested by a personal experience of over six hundred operations for cancer in various parts of the body, the following generalizations are made:

Cancer occurs widely throughout the entire animal kingdom, in the herbivora and the carnivora, in birds and in fish, quite regardless of habit or mode of living. Its incidence and growth obeys the law of no known infection; its actual increase in frequency is still unproven; rare cases undergo spontaneous retrogression; in experimental cancers, at least, such regression is accompanied by an immunity; the immunity in sarcoma in dogs, at least, is in the blood and may be used to cure other cases in dogs; in man this principle has not as yet been established; no curative power of any drug or serum has (as Bevan has shown) proven effective for human cancer. X-ray and radium may kill superficial cancer cells, but as agencies for cure they are unreliable. In cancers on the superficial parts of the body where observations may be accurately made, at least in most cancers, there is a pre-cancer stage, the most common form being chronic irritation, chronic ulcer, scar, wart, moles, benign tumors, keratosis, etc. Such cases should be decancerized. Preventable or curable cancer should not be watched, it should be prevented or cured.

THE NON-OPERATIVE TREATMENT OF INGUINAL HERNIA AND THE HERNIA AND TRUSS QUESTIONS.*

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You will admit with me, at least for the time being, that hernial emergencies must sometimes be met in a non-operative way, and that some persons cannot or will not be operated upon for the cure of hernia. This being true, this subject becomes a very important one, notwithstanding the fact that it has been remarked to me lately, "There is no non-operative treatment of hernia," and also, "Were I to have a hernia patient I would send him to an instrument house. He would be supplied with a truss, but I would not know whether it was the proper style or fit."

Three per cent. and more of our population are afflicted with some form of hernia. About 7 per cent. are seen in the first year of life.

To illustrate the frequency with which hernia occurs among the dispensary class of a large city, the Hospital for Ruptured and Crippled of New York cared for 4,777 patients in their out-patient department in 1908.

Inguinal hernia occurs more frequently than any other form. Berger estimates that the affliction is bilateral in about 90 per cent. of the cases.

A child or adult suffering from hernia without palliative assistance is physically defective and more or less a cripple. In the child physical activity is interfered with, and mental and physical development thereby impaired. In both child and adult the malady, if untreated, grows progressively worse, earning power is interfered with, self-respect diminishes and the patient becomes more or less a dependent, and in the latter years of life may become a public charge.

It seems that the affliction is less common among persons otherwise crippled. With the permission of the orthopedist, I have, at irregular intervals, had all of the children in the Home for Destitute Crippled Children examined for rupture. The average number of patients is about seventy-five. The afflictions consist largely of bow legs, knock knees, paralyses, and various forms of osteo and arthritic tuberculosis. In three years' time not one inguinal or femoral hernia has been observed among these, although umbilical hernia is of frequent occurrence. The former may be accounted for by the fact that many of these children have been inactive or bed-ridden from early life. Their recumbent position favors obliteration of the sac by agglutination in congenital cases, and it may be that they do not often develop acquired hernia because of their inactivity, while their early tendencies to cry and have

* Symposium on Hernia read at the meeting of the Chicago Medical Society, Dec. 15, 1909.

† Cuts of trusses taken from catalogues Hastings and McIntosh Truss Company and Wm. H. Horn and Bros., Philadelphia.

digestive disorders associated with distention of the abdomen more than other children may be a factor in the frequency of umbilical hernia among them.

As a sociologic proposition it pays to treat and cure hernia. The revenue of many families is so limited that they cannot afford a truss for either child or adult, but many more families are willing and able to pay a moderate and proper price, yet wholly unable to meet the exorbitant figure so often exacted for trusses by advertising firms into whose hands this class so often fall. Thus there is a crying need in every large city of a source of cheap or free supply of trusses for the poor and destitute where they may be properly adjusted at frequent intervals.

The frequency with which hernia existed among the poor, and the suffering they were subjected to, because of their inability to purchase apparatus or their ignorance of the fact that they might be relieved by apparatus, probably prompted the founding of the London Truss Society many decades ago. The Hospital for Ruptured and Crippled of New York took up the palliative treatment of the destitute and poor ruptured population in 1867, using truss treatment pretty generally until about 1888, when the operative feature was introduced. It is apparent that an institution distributing charity as this one does must find an economic means of supplying trusses to the large number of patients applying for them. Their trusses are manufactured in the institution and are of the most simple pattern yet efficient. The truss consists of a steel spring covered with rubber tubing passing in a circular way around the pelvis. The pad consists of a wooden button-mold covered with chamois. The total cost, I was told, is about 15 cents each.

Upon the recommendation of Dr. John Ridlon, the board of directors of the Home for Destitute Crippled Children of Chicago in 1906 passed a resolution that ruptured children are crippled children and introduced the feature of treating children, destitute or poor, suffering from hernia, as a part of the work of the home. Patients treated in the out-patients' department, on whom trusses are used, or their parents, are taught the details of application and use of their trusses and are expected to return at regular intervals for their readjustment. The home furnishes trusses at nominal prices to persons deserving of charity and gratis to the destitute and receives for operation children between the ages of 3 and 11 years. It may be said that Dr. Ridlon was the originator of this charity in Chicago.

When we consider the large number of persons afflicted with hernia and when our attention has been so often called to the abuses imposed upon these by unqualified truss merchants and vendors, it is but natural that those who have given the question the greatest amount of study should appeal to their colleagues to manifest more interest in ruptured patients.

Omitting points of value in the history, we pass to the every-day phases of this subject.

METHODS OF EXAMINATION.

1. When patients are suffering from acute complications such as strangulation, their general condition often does not permit of anything more than an examination in the recumbent position. In reducible hernia the dorsal position favors relaxation of the abdominal muscles, so that the contents of the sac assisted by gravity are more easily reduced. The deductions to be drawn from this portion of the examination are simply the ease or difficulty of reduction.

Examination in the erect position shows the ease and promptness with which the contents of the hernial sac descend, and finally the size of the hernia and relative strength of the pillars of the ring when the muscles of which they are a part are thrown into use in assisting in the maintenance of the upright position. If upon standing the contents of the sac do not protrude, descent may be accomplished by having the



Fig. 1.—A method usually described for examining cases of inguinal hernia.

patient tighten the abdominal muscles or cough. A very useful means of refilling the sac is by making gentle pressure over the abdomen with the palm of the hand. This is especially applicable in children.

The method of passing the finger into the rings and the canal is important. One must first know the location and relationship of these. Poupart's ligament is first located by palpation and not by its neighboring inguinal fold. The crest of the pubes is next located and just to its outer side and immediately above Poupart's ligament is found the aperture known as the external ring, through which passes the spermatic cord, which is easily felt. An index finger of moderate size may be introduced into the average normal adult ring without serious discomfort if the cord is avoided where it crosses the pubes. The finger is more easily inserted when hernia exists. The contents of the sac should be reduced before this examination is attempted. The method of introducing the finger is usually described as a procedure in which (Fig. 1), with the

palm turned upward and all but the index finger flexed, the latter is introduced into the inguinal canal, after first invaginating the scrotum, and in females the skin lying just below the external ring.

I have adopted the reverse method of examination because it is less uncomfortable to the patient and one can exercise more delicacy of touch and can ascertain all that is desired or afforded by the former method. The method is carried out (Fig. 2) with the fingers fully extended, palm downward, and after invaginating the skin with index finger its bulb drops immediately into the external ring. At once the cord is recognized by the sensitive bulb of the finger and uncomfortable compression of it is avoided. The finger is swept from side to side, revealing the thickness and tone of the pillars of the external ring and lifted upward to test the height and thickness of the arch and then passed upward through the canal to examine the internal ring in the same manner and for the same purpose. The length and obliquity are likewise determined.



Fig. 2 (a).



Fig. 2 (b).

Examining *right* and *left* inguinal canals from the *right* side of patient, using *right* hand for both.

It is apropos to state here that direct inguinal hernia is defined as one always lying to the median side of the epigastric artery, and is always acquired. According to this definition I have never seen a direct inguinal hernia. It must be understood that hernia with widely dilated rings, lying directly opposite one another, therefore with none but an imaginary canal between, allowing direct escape of the abdominal contents, do not conform to the above definition and are not direct inguinal herniæ. Some surgeons doubt the existence of this type, although they are said to constitute 7 per cent. of all inguinal herniæ.

A large irreducible hernia may not permit of the passage of the finger into the rings and, if not, one contents himself with palpating the tumor which is grasped in the hand. A suspicion of the contents of the sac may be thus revealed. An impulse upon coughing is usually obtained unless strangulation exists, in which case the impact from the abdomen is checked by the constricting band.

2. Percussion gives a tympanitic note over loops of gut containing gas and a dull note when impacted, and, of course, a dull note where the contents of the sac is omentum.

3. What will be seen upon inspection will depend upon the size and degree of descent of the hernia at the time of the examination. Where there is a relaxation of the internal ring with only slight protrusion, there may be no external indications of the difficulty. The patient is none the less afflicted with hernia and may suffer from more or less pain in the inguinal region after standing. These are often mistaken for cases of chronic appendicitis or diseases of the adnexa, and it is in such cases that a truss may aid in differential diagnosis. When the descent occurs as far as the external ring, bulging is seen in the region of the canal, and when the descent is below the external ring the diagnosis becomes almost apparent upon inspection. Illumination is a valuable aid in eliminating the question of hydrocele.

The non-operative treatment of inguinal hernia naturally arrays itself as follows: 1. Emergency; 2, methods intended to cure; 3, palliative.

EMERGENCY TREATMENT

Under the head of emergency treatment we encounter complications in herniæ which have become inflamed, impacted, incarcerated or strangulated.

For the inflamed hernia we use elevation; also ice bags on theoretic grounds, with good clinical results. Moist heat produces equally good results. Severe dermatitis or cellulitis in the inguinal or scrotal regions must not be mistaken for an inflamed hernia. Further traumatism should be avoided and the patient put to rest. The bowels should be moved promptly by colonic flushings and freely by catharsis, and no food or drink given until the patient's condition has materially improved and he appears to be out of danger. No attempt should be made at reduction in cases where a suspicion of the sac containing pus exists.

In cases of impacted hernia no time should be lost in making an effort to empty the loops of intestine contained in the sac of their contents. As a usual thing it is safer to proceed deliberately to wash out the patient's colon and place him in the recumbent position in bed, the tumor elevated. It is sometimes helpful to raise the foot of the bed. A large, hot, moist dressing should cover the tumor, and surround the area about the neck of the sac without making pressure directly upon it. These dressings should be kept hot by the use of incompletely filled hot water bags, first emptied of air, so they will lie flat and be more comfortable. After a little while the abdominal muscles will have become more or less relaxed and one may proceed with kneading, and will be more likely to obtain results than if moist heat had not been used. One begins to knead the neck of the sac and gently manipulates the intestine in the direction of the abdominal cavity, the kneading following the direction taken by the neck of the sac. It is not advisable to reduce a loop which is known to be overdistended with contents of dense con-

sistency, because the obstruction may remain. This kneading is really a form of taxis. Incarcerated hernia should be reduced by taxis if possible.

Strangulated hernia should also be reduced by taxis, which when not accomplished promptly should be abandoned. Entirely too much time is ordinarily wasted on the temporizing treatment of strangulated hernia. In fact, there is no temporizing treatment when taxis has failed.

Taxis is performed in the following manner: The patient is placed in the dorsal position, pelvis elevated. After previous application of moist heat, both thighs are flexed and made to rest at ease, and when favorable results are not immediately obtained the thigh of the affected side should be adducted and not abducted. It sometimes occurs that this relaxes the pillars of the rings which are usually the constricting factor. Morphin may be given hypodermically in advance. Where taxis fails without anesthesia, an anesthetic should be administered, but when given all should be in readiness for operation in case reduction is not accomplished, so that no time will be lost and repetition of anesthesia will not be necessary. The physician stands at the side of the patient grasping the tumor so as to draw it away from the external ring and in the axis of the canal. With the index finger and thumb of the other hand he grasps the sac and contents adjacent to the canal and endeavors to push the now elongated neck of the hernia, loop by loop, through the constricting ring. In case taxis fails and the patient refuses anesthesia or operation, the foot of the bed should be elevated and the patient should be placed in the dorsal position with permission to change to other positions. Moist heat should be applied about the tumor. Spontaneous reduction sometimes occurs under these circumstances. Reasonable amounts of morphin may be given with hopes of relaxing the constricting band. Too much cannot be said about the delicacy necessary in the art of taxis. In one of the largest hospitals in the world where many emergency operations have been performed for strangulated hernia, about 50 per cent. of cases in which the rupture of the intestine was found it was directly traceable to taxis, and in many of these the ability to reduce the intestine was due to its rupture while taxis was being performed.

There is no specific time limit for the performance of taxis, but it is well to live up to the arbitrary law that taxis, even under the most favorable condition, should not be of more than fifteen minutes' duration, because of the pain and shock induced and the danger of rupture due to too energetic efforts.

METHODS INTENDED TO CURE HERNIA

Among these so-called non-operative treatments the injection method is the most popular. This consists of the injection of an irritating substance into the region of the hernial passage intended to create an inflammation resulting in agglutination of surfaces and filling of spaces by an inflammatory exudate, which when completely organized will form a blockade to the passage of the abdominal contents into the sac. This treatment has been long abandoned by the regular medical profession because of its uncertainty and danger. It is usual for the agglutinated surfaces to spread apart as the infiltration disappears, and in three to six

months the patient's hernia has returned. The danger associated with this form of treatment is greater than is commonly supposed. I have seen several patients in whom there was extensive sloughing of the abdominal wall following this treatment. It is never safe, though administered with the strictest aseptic precautions. This is the form of treatment commonly used by those who advertise to cure hernia by non-operative treatment. I am sorry to relate that, although teachers of surgery have opposed this form of treatment for more than twenty-five years and have uniformly given their reasons for it, many of their pupils, especially in outlying districts, allow themselves to become victimized by these commercial interests.

The injection method is carried out by introducing the index finger into the hernial canal and holding it there, the hernia having been reduced, a hypodermic needle is introduced one-half inch from the edge of the internal ring. If no blood escapes from the needle, indicating that a blood vessel has been punctured, the injection is made (Sultan).

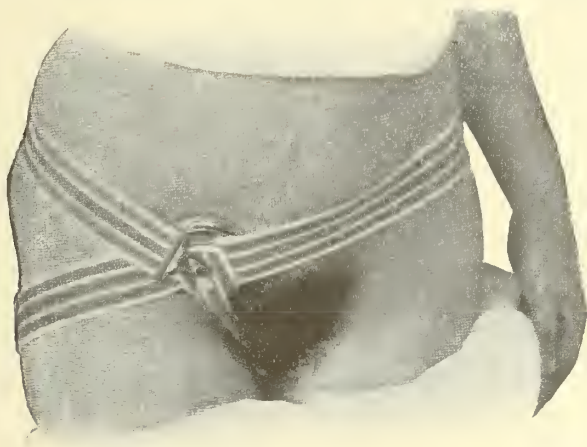


Fig. 3.

PALLIATIVE TREATMENT.

The palliative treatment brings us to the truss question. There are a number of patients who, because of choice or necessity, must be treated by palliative means. It is apparent that the only palliative treatment we have for hernia is some form of support. In irreducible scrotal hernia a scrotal bag is used which may be laced so as to resist further exit of the abdominal contents.

In reducible hernia the truss is our only resource. It is probable that the first trusses consisted of strips of hide tied around the pelvis, to which were united perineal straps of sufficient width and with sufficient compression to resist the protrusion of the hernia (Macready). It is surprising to see the great variety of trusses on the market. They are classified as trusses with and without springs.

Trusses without springs are modeled after those of primitive man, except that a pad is added. They are usually made of webbing, elastic or

non-elastic. Clasps and buckles refine their mechanism. This type is illustrated (Fig. 3). It is frequently said that these are obsolete because of their insecurity, uncleanness, and because they may always be replaced by a spring truss having the opposite points to recommend it. It is sometimes necessary to use one of this pattern because of some peculiarity of bodily conformity. They are especially indicated in patients with pendulous abdomen.

The Spring Truss.—The essential parts of a spring truss are the spring and the pad. That end of the spring attached to the pad is called the neck, and that portion lying beneath the anterior iliac spine forms the shoulder of the truss; the dorsal portion is the area of counter pressure.

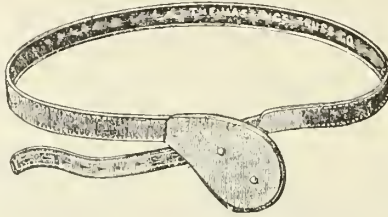


Fig. 4.—Open truss.

Springs are either long or short. Short springs are those which do not travel beyond the median line behind. Some of these are so short as to afford counter pressure over the sacro-iliac region of the affected side. Long springs travel beyond the dorsal median line, making counter pressure on the dorsal side opposite to that affected or diffuse the counter pressure across more or less of the back. Lequine's truss passed over three-fourths of the circumference of the pelvis, and Camper's five-sixths of that distance.

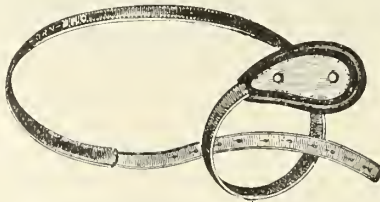


Fig. 5.—French (curled) truss.

The spring is made of the best steel of such a width and thickness, other things taken into consideration, as will give the desired pressure. The spring will be thicker and wider in open trusses (Fig. 4), and the reverse in curled trusses such as are represented by those of French pattern (Fig. 5). One edge of the spring is longer than the other at given places in order that the truss may travel in a circular way around the pelvis and properly fit the outline of the body. Where there is likely to be an overhanging of the skin at a given point the spring is hammered out, lengthening its edge proportionately more than it increases its width, causing a flare at that point. The spring being shaped so as to approximately conform to the average body is now covered with leather which

is stitched along the edges so as to lift the edge away from the body,, or a modern truss is covered with vulcanized rubber or rubber tubing (figures of long- and short-spring trusses).

The Pad.—Pads are classed into soft and hard pads. Soft pads have been devised stuffed with moss, pig's hair, horse hair, and every conceivable material with every possible covering. The more recently recommended soft pads consist of rubber bags of the proper size and conformity, filled with water or air. All soft pads lose their shape by matting down of their contents, or in the cases of air and water the rubber becomes more and more lax, the contents gradually lost, the convex surfaces especially desired are flattened and their efficiency impaired. These types are very susceptible to injury and are put out of use at inopportune times. They should not be prescribed.

The hard pad has been made of iron, steel, platinum, silver, aluminum, wood, ivory, cork and more lately of hard rubber. Each in its time has had its supporters. The hard rubber pad answers every purpose from the standpoint of cheapness, efficiency, durability and sanitation and is the pad I most heartily recommend if a hard pad can be used at all, and in this connection I will say that it is almost invariably possible if one takes the pains to secure a pad of proper size, thickness and conformity. It seems not to be commonly known that a pad and spring do not necessarily belong together. When a spring can be made to fit, an improper pad, too large or too thick or of improper convexity, may prevent the successful usage of the truss. Your merchant will change the pad for one adapted to the case. The same applies to the spring. One should use the smallest pad possible. This is gauged by the size of the ring. In small rings the pad need only overlap the edges about a half inch, but as the rings increase in size there is a relative increase in the necessity of the pads further overlapping the margin of the rings, so that in the large scrotal hernia in which the rings are so often very large a wide cumbersome pad overlapping the pubes is sometimes required.

The size of the pad must not conform to the fancy of any given individual. It must fit securely, comfortably and should not press on Poupart's ligament or on the pubes except in cases of scrotal hernia of exceptionally large size. Neither should the thickness of the pad nor the conformity of the surface opposed to the body be selected according to any certain pattern. It must be just thick enough to bury itself comfortably in the skin and subcutaneous tissue and make pressure through the external oblique upon the internal ring and upper part of the canal. One of moderate, uniform convexity will often answer where there is a thin abdominal wall, while in others it will be necessary to use an egg-shaped pad or a two-planed pad. The varieties of pads offered for sale make it relatively easy to secure the type required.

It is desirable to have the pad securely fixed upon the spring; otherwise its position is often interfered with by the patient; therefore, while the ratchet, ball and socket and other movable pads at first seem advantageous, they have the disadvantage above mentioned, added to which is

that of lack of strength, and are often sprung out of their adjusted positions. Most trusses require a circular strap to assist in the maintenance of their position. These are attached to the dorsal extremity of the truss behind and are buttoned upon the upper half of the pad in front.

In persons of good bodily conformity perineal straps are not necessary, but when used should be composed of the most sanitary material. Of late I have used $\frac{3}{4}$ and $\frac{7}{8}$ inch webbing passed through a small rubber tube. They should be fastened to the truss over the side of the ilium on the affected side, descend to the gluteal fold, pass through it to the inguinal fold in front and be buttoned to the middle or lower half of the pad. The perineal strap interferes with freedom of bodily move-

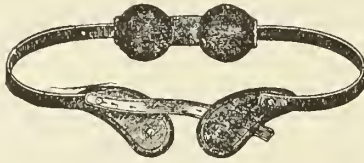


Fig. 6.—French double inguinal.

ment and tends to dislodge the truss from a comfortable position when certain bodily postures are assumed. This is especially true when it is attached to the truss back of the ilium.

The Double Truss.—In a general way what has been said of trusses applies to both the single and double variety. In double trusses of usual pattern, the pads are joined in front by straps or strips of metal; the first is represented by the French (Fig. 6) and the second by Hood's truss (Fig. 7). The spring may be continuous or interrupted at the back, front or both.

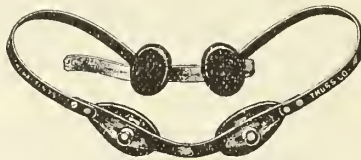


Fig. 7.—Hood's double inguinal.

In measuring for the ready-made truss all that is required is a snug, almost circular measurement of the pelvis on a level with the upper extremity of the sacrum, behind, dropping to the anatomic depressions just below the anterior iliac spines in front and meeting at the linea alba on a level with these. I have observed some, when measuring, pass the tape over the same course behind, but on reaching the front of the body both ends of the tape were allowed to drop to the pubes. I have thus far found these measurements the same made in either way, although I can conceive of peculiar conformities of the abdomen which would make them differ. One inch in addition to the circular measurement is allowed for double trusses.

In measuring for a truss to be made to order the same method of measurement is acceptable; but one may give the distance from the

anterior iliac spine to the pubes and from the anterior iliac spine across the back to that of the opposite side and thence to the starting point, also the size of rings, the distance from the middle of the upper margin of the internal ring to the pubes and iliac spine. The shape of the abdomen, muscularity and deformity, if any, should be mentioned. It is seldom really necessary to have trusses made to order.

The physician should measure and make specifications or choose the appliance to be used; he should adjust it himself and have the patient return to him at regular intervals for readjustment and observation, for no truss remains properly adjusted for any great length of time. These patients should not be relegated to the merchant or the mechanic, but should be in the hands of the physician who best knows the anatomy and pathology of the affliction; and with just a little study he will acquire all the necessary knowledge of the mechanics of a truss.

Adjusting a Truss.—A truss may be adjusted with comparative ease. One may find the spring too strong or too weak. In the first case it may be weakened by forcibly spreading the spring at one or more points where the strength seems too great or by forcibly spreading the entire length of the spring. To strengthen, one bends it in the direction of its curve at one or more points where it seems weak, or the entire spring may be curled up. In trusses covered with vulcanized rubber it is necessary to heat the part to be bent, being careful not to melt the rubber. This is done by holding the part over a flame or by immersion in hot water. It is usually necessary to heat repeatedly during the modeling process. The spring should be so adjusted that it will lie flat upon every surface with which it comes in contact and that neither edge buries itself into the skin. In most of the trusses prescribed by skilled persons all of the dorsal portion of the spring bears a part of the counter pressure, but there is usually one point of greatest counter pressure commonly located at the dorsal end of the spring. When this becomes uncomfortable and the truss cannot be adjusted to remove this discomfort (but this can usually be done), a wide, round, flat, hard pad can be placed beneath it and will diffuse the pressure in this locality. A point at which there is usually much difficulty in adjusting a truss is where it rides across the back of the ilium. Here the angle may be widened or shortened and one edge of the truss so tilted as to afford comfort. The side of the ilium usually receives a part of the pressure and yet as the truss sweeps from the outer side of the ilium beneath the anterior iliac spine a more acute angle must be formed in it to prevent too much pressure upon this prominence. The neck of the truss is tilted from side to side and also forward or backward so as to give the proper direction of pressure to the pad.

To test efficiency, have the patient sit on the edge of a chair, knees apart, and contract the abdominal muscles. An efficient truss will prevent protrusion (Macready). The qualifications of a truss are that it should prevent protrusion, not interfere with wearing apparel, therefore be perfectly molded to the bodily contour; be so comfortable that one is not ever conscious of wearing a truss and permit of free bodily move-

ment and most violent athletic sports, even swimming, during which, if properly fitted, it will not become displaced.

The life of a truss varies according to the wearer and the material. Youths misuse their trusses. Infants' trusses with soft pads and leather-covered springs are ruined by the action of urine. Vulcanized rubber trusses are the most sanitary and durable. They are the least comfortable when new and the most comfortable after being worn awhile if properly adjusted.

A truss should be applied when the patient is in the recumbent position, the hernia first having been reduced. It should be worn next to the skin or with only thin clothing intervening. A truss worn for the purpose of so-called cure should be worn day and night. When a large hernia exists the truss should also be worn day and night, and, irrespective of size, the same is true if the hernia is one showing a disposition to strangulation.

After wearing a properly fitting truss it is soon observed that the descent progressively lessens until, in a larger percentage of cases than is ordinarily admitted, there is no descent upon standing, and finally, for all practical purposes, some of these patients give every appearance of a permanent cure. The failure of the hernia to descend is no indication for immediate disposal of the truss. On the contrary, it should be worn at least for a few years after there is an apparent cure.

The mechanism of cure is uncertain in any given case. Specific theories are offered, but it is probable that none applies singly or jointly in all cases. I believe that in congenital hernia the compression of the sac and agglutination of its surfaces is more a factor in the cure than in acquired hernia, and that in both the pillars regain their tone when not permitted to become overdistended. It may also be that in both types the margins of the pillars become fixed centrally, due to traumatic inflammation induced by the pressure of a truss.

A truss may be worn though the testicle has not yet descended. Upon applying the pad such a testicle slips above or below it. I have seen some children in whom the engagement of the testicle below the pad apparently prompted its descent. Of course, the pad must not rest upon the testicle.

INGUINAL HERNIA IN INFANTS.

The question is often asked me how early may an infant begin to wear a truss. My answer is from the time it was born! There is a prevalent superstition connected with the use of trusses in infancy which interferes with their early application, but in reality there are no frailties associated with the parts or the age of the infant that any more interferes with the use of a truss than three or six months later, as is so often proposed, and it seems to me that the latter advice is not characterized by proper consideration of the subject, but is given in an offhand way as if there were a specific time at which the use of a truss might be begun. The type of truss most applicable for infants is the cross-body truss (Fig. 8) which may usually be used without perineal straps. I have frequently used double French trusses on infants without perineal

straps. The perineal strap should be dispensed with if possible, in children, on account of their uncleanness, and when used should be made of rubber tubing. It is one of the rarest experiences for us to have the slightest dermatitis develop in the regions upon which the truss lies, and practically every mother, no matter how illiterate, is taught its skilful application.

When we consider the fact that every capable practitioner who has given consideration to the question of infantile hernia and has learned the art of using trusses can tell us of innumerable children who have grown up under his observation, and apparently remained cured of their herniæ, and when we consider the flattering statistics given out by the Hospital for Ruptured and Crippled of New York where the truss is used among infants and young children as routine, and where 90 per cent. of the children under four years of age are apparently cured by means of the truss, and when this method of treatment is supported by some of the most eminent herniotomists, it seems to me wise for those with less opportunity for observation to pause before they advocate in speech or print the general application of herniotomy among infants.

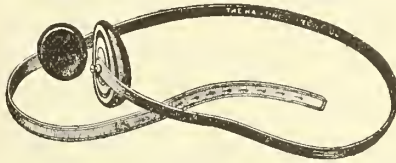


Fig. 8.—Cross-body truss. Applied from the well to affected side. Thin pointed portion of pad upward. May be used on opposite side by reversing pad.

Those who are looked to as authority on this subject should be careful what they teach, for, although these children might be safe when operated upon by skilled herniotomists who have had much to do with the surgery of childhood and who will foresee more complications than others, it must be remembered that the majority of infants operated upon would not fall into any such hands, and such broadcast advocacy would result in thousands of operations in the first year after its general sanction, I dare say with an appalling fatality. The surgery of childhood still falls under the head of general surgery, so that the work is so divided that, except in rare instances, a very busy surgeon is not likely to be called upon to do a half-dozen abdominal operations among infants in a year. During my assistantship of nearly four years I do not remember seeing a single abdominal section on an infant; therefore, success in infantile herniotomies in the hands of any one general surgeon must not determine the law that we shall operate routinely upon infants for hernia. Let us bear in mind that a large number of hernias in adults suppurate; it was years before we brought our percentage of suppurations in all herniotomies below 10 per cent., and in these same cases were not the collodion dressing and all forms of excluding dressings tried? Let us also bear in mind that the disposition of bladder and intestinal excrement cannot be controlled with certainty in infants, notwithstanding the much-lauded rubber bag for the genitals, which, in my hands,

has not uniformly proven a safeguard; and, further, that the crying of an infant cannot be controlled. Does not this very act of crying increase intra-abdominal pressure, forcing the abdominal contents against the recently sutured hernial tract, tending to open it? Does not each muscular contraction add traumatism to the fibers engaged in sutures? Does not this pull widen our stitch holes of the deeper sutures, giving us dead spaces, and does not the whole process invite serum stasis and infection? For myself I prefer to err on the side of conservatism and do fewer herniotomies rather than by my own act or example endanger unnecessarily the lives of these infants, and I shall use the truss among children under four years of age and until such time as I can rely upon their control of urine and their emotions. I do not say that I will not change the position I now hold, but, if I do, it will be because I have been driven to the necessity of operating upon ruptured infants for the purpose of meeting emergencies or because of parental neglect of proper application and care of the truss. Thus forced to operate upon these I may prove to myself the safety and sanity of the general application of herniotomy among infants. The crucial question to be answered by one who proposes herniotomy for an infant should be: Were this my child, would I allow this operation?"

SEVERE SEPSIS FOLLOWING TONSIL OPERATIONS WITH REPORT OF A CASE OF DEATH FROM SEPSIS FOLLOWING TONSILLECTOMY.

A CASE OF CEREBRAL THROMBO-SINUITIS FOLLOWING TONSILLOTOMY; A
CASE OF GANGRENE OF MUSCLES OF THE NECK FOLLOWING
TONSILLECTOMY.*

L. W. DEAN, M.D.
IOWA CITY, IOWA.

The frequency of infection following tonsil operation I have been unable to determine. A careful examination of the literature has failed to furnish me with any substantial basis upon which to base such an opinion. Some operators have been specially fortunate in this line while others have not been so fortunate.

Waugh¹ reports nine hundred cases of tonsillotomy without any complications, hemorrhage or sepsis. He examined the cases at the end of the first and fifth week.

Mackenzie² reports two hundred and thirty cases of tonsillotomy with no case of sepsis following.

Casselberry³ in treating of the indications for surgical interference in diseases of faucial tonsils and the methods of choice in operating gives an analysis of four hundred and eighty cases of tonsil operations, most of them double. He does not mention a case of infection.

*. Candidate's thesis for the Chicago Laryngological and Otological Society. Read before the Society, April 19, 1910.

1. Waugh, G. E.: *Lancet*, 1909, i, 1314.

2. Mackenzie, G. H.: *Brit. Med. Jour.*, 1893, i, 635.

3. Casselberry, W. E.: *Laryn.*, 1906, xvi, 425.

L. C. Deane⁴ states that in his large experience in tonsil surgery he had only two cases that were followed by systemic infection.

The review of the literature shows that many others have not been so fortunate.

In my experience sepsis has been a more formidable sequela of tonsil operations than hemorrhage. I am more afraid of it. Mild infections accompanied by cervical adenitis and sometimes high fever and infections of the ear and other neighboring structures have not been uncommon in my practice. I have had two cases of exceedingly severe infection. The report of these will appear later in this paper. These infections are not due to lack of proper precautions because my cases are almost always prepared by local and general treatment and the most careful asepsis practiced during the operation. Usually the tonsil crypts are disinfected for several days before the operation and a laxative is given the night before. Most of the operations are performed in the hospital under aseptic conditions. After the operation a hydrogen peroxid gargle is used frequently and twice a day the tonsil wounds are carefully cleansed with hydrogen peroxid, care being used not to injure the cut surfaces. All patients remain in the hospital from five to ten days. I keep my patients quiet in the hospital because I believe that first, this is a good way to help prevent hemorrhage, and second, because chilling of the body, over-exertion and other indiscretions by reducing the resistance of the tissues are very pregnant causes in the production of sepsis.

When we consider the bacteriologic flora of the mouth and the impossibility of disinfecting it, it seems marvelous that there is not more infection following an operation that leaves the cut veins exposed and lymphatics open.

In my experience the infections have been much more frequent and severe since I have been performing tonsillectomy and not tonsillotomy. Of my two very severe cases one followed tonsillotomy, the other tonsillectomy. I regret very much that I cannot find sufficient literature upon this subject to warrant a positive opinion. The danger of infection following enucleation of tonsils is my main reason for not enucleating tonsils, unless badly diseased, in children too young to have the throat properly prepared before the operation and treated after. In babies where it has seemed best to enucleate tonsils I have had no infection of any importance.

I have avoided doing tonsil operations if an acute inflammation of the throat is present or if the patient's temperature is not normal unless the fever be due to some process which cannot soon be remedied, as tuberculosis. Neither do I operate immediately following an attack of acute tonsillitis. One of the most severe cases of infection following a tonsil operation that has been under my care was the result of tonsillotomy done during an attack of acute tonsillitis. Eight years ago a patient came to me to have his tonsils trimmed. He had acute tonsillitis. I told him he must wait until the throat was normal. The same day a general surgeon performed a tonsillotomy. I saw him on the second day.

4. Deane, L. C.: Cal. State Jour. of Med., 1909, vii, 92.

He had a very bad double sided cervical adenitis, with a temperature of 104 F. An abscess formed on one side of the neck. It was four weeks before he left the hospital.

A few express an opinion that the presence of acute inflammation of the tonsil is not a contraindication for tonsil operation at the time.

Behrens⁵ submits a report of one hundred and twenty-seven tonsillotomies, some in the acute stage of diphtheritic infection. There is no mention of any systemic infection in this series.

Bleasdale⁶ reports two cases of acute tonsillitis where he removed one tonsil with a guillotine during the attack without any complications. He thinks that an acute tonsillitis is no contraindication to the removal of a tonsil.

Ricordeau⁷ in 1886, in describing accidents following tonsillotomy called attention to mild infections with much edema following tonsillotomy that might prove fatal. He called attention to subacute inflammation of the remnants of the tonsil, its spread to other parts of the pharynx and glottis and sudden death that may result from it. He quotes Bauchacourt⁸ as reporting a case of this kind where the patient died of edema of the glottis, and Martin⁹ who published two similar cases. The author cites two cases of his own of tonsillotomy followed by edema of the throat with a fatal issue in one:

1. A woman, aged 36 years. Tonsillotomy followed by edema of the throat with disturbed respiration and difficult deglutition. Recovery.

2. A male, aged 25 to 30 years. Tonsillotomy. Edema of the throat eleven hours later. Death that same night. Autopsy showed nothing outside of intumescence and infiltration of cellular tissue of the larynx and pharynx.

Le Play¹⁰ reports a case of infection following tonsillotomy that was accompanied by a scarlatiniform eruption.

Fisher¹¹ reports two cases of postoperation rash after tonsillotomy:

1. Male, aged seven years, developed a scarlatiniform rash after tonsillotomy. The cervical glands were enlarged and the tonsils and pharynx were covered with necrotic patches, resembling scarlet fever. The temperature arose to 105 F. Vomiting preceded the rash. Toxemia symptoms were present. In the second week acute nephritis and double otitis developed. The temperature persisted five days after the opening in the middle ear was enlarged so that the toxemia of the nephritis evidently caused the febrile disturbance. There was no previous exposure to scarlet fever.

2. Female, aged three years. The removal of tonsils and adenoids was followed by an eruption of three days' duration. The temperature was 103 F. The cervical glands were swollen. The tonsils and pharynx showed evidence of necrotic patches. Desquamation. Recovery at the end of two weeks. Diagnosis, post-operative scarlatiniform eruption. The author is of the opinion that the infection took place before the operation, that the trauma lowered the resistance and shortened the period of incubation. He expressed the opinion that if the child's temperature is above normal the operation should be postponed.

Wingrave¹² reports thirty-four cases of surgical rash after tonsillotomy in the course of seven years. The constitutional disturbance was slight.

Deane, L. C.¹³ reports a case of tonsillotomy in a patient, aged nine years, that was followed on the fourth day by a rash on the body, general malaise, loss of appetite and a temperature of 101.6 F. The rash was on the inner side of both thighs; an erythematous rash covered the face.

5. Behrens, B. M.: West. Med. Rep., 1889, xi, 3-5.

6. Bleasdale, R.: Brit. Med. Jour., 1903, i, 75.

7. Ricordeau, R.: These de Paris, 1886.

8. Bauchacourt Liegeois Dict. de Dechambre.

9. Martin: Gaz. d. hôp., 1868, p. 433.

10. LePlay: Arch. gen. d. med., 1905, ii, 3280.

11. Fisher, L.: Larynx., 1904, xiv, 363.

12. Wingrave, W.: Lancet, 1901, ii, 591.

13. Deane, L. C.: California State Jour. Med., 1909, vii, 425.

Lichtwitz¹⁴ claims to have found Loeffler's bacilli in the pseudo membrane covering the operative wound in eleven out of twenty-seven cases, or 40 per cent. of tonsillotomy by electrothermic cautery. The clinical course of these cases did not differ in any way from the cases in which the Loeffler bacilli were not demonstrated. The Loeffler bacilli even when associated with streptococci in these cases have no effect on the clinical course.

Harmer¹⁵ made a series of experiments with a view of verifying the findings of Lichtwitz. Nine of the guinea pigs he inoculated died. He found no Loeffler bacilli but found pseudodiphtheria bacilli in eight out of thirty-one cases or 25.8 per cent. after tonsillotomy with sharp instruments.

Kobiak¹⁶ reports a case of diphtheria infection in a child after removal of the tonsils and adenoids. There was both throat and nose infection and an abscess of the posterior pharyngeal wall. He expressed the opinion that she carried the diphtheria bacilli in her throat which became virulent after the operation.

Caille¹⁷ reports a case of tonsillotomy followed by diphtheria and croup. A boy, four years of age, with hypertrophic tonsils, adenoids, swollen gums and carious teeth was operated on at once, without preparatory prophylactic treatment, contrary to the author's usual custom. A tonsillotomy was performed. The next day the boy was violently sick. The stumps of both tonsils were covered with a dense pseudomembrane, extending over a portion of the anterior arch of the soft palate. The entire pharynx was intensely hyperemic; bilateral submaxillary glandular swelling was pronounced and high temperature and general prostration were present together with other troublesome symptoms, such as vomiting and cerebral unrest. A swab culture from the pseudomembrane and one from the carious teeth and gums revealed bacilli and streptococci. The following day croupy cough and stenotic breathing. Twelve hours later the posterior surface of the epiglottis was found covered with a thin deposit and the laryngeal stenosis had increased. On the following morning intubation was performed for dangerous stenosis. This is a unique case in the author's experience which he ascribes to lack of prophylaxis before the operation.

LePlay¹⁸ reports the following case: Male, aged eight years, entered the hospital with a diphtheritic angina and antidiphtheritic serum was administered. There was bilateral cervical gland enlargement. Culture from the throat showed no diphtheria bacilli. It was learned that eight days previous a double tonsillotomy was performed. In the left lung distinct dullness with an expiratory egophonic souffle. An exploratory puncture drew pus containing on direct and cultural examination pneumococci. A pleurotomy was performed and drainage instituted. Recovery was complete in one month.

The author mentions several points of interest. The traumatic origin of the false membrane on the tonsils lead to an erroneous diagnosis of diphtheria. The debility caused leads to infection by the bacteria in the mouth through the lymphatics of the mediastinal glands with general infection.

Ard¹⁹ in an article on the dangers associated with removal of the tonsils states that acute articular rheumatism and endocarditis have been reported as following tonsil operations. He quotes Hemmebert as reporting five cases under his own observation where septic infection of the serous membranes resulted. Severe inflammation of the cervical glands giving rise to severe and persistent symptoms was observed by Gronbeck in four cases. He reports Putnam as having seen two cases of meningitis follow the operation. He says middle ear inflammation with mastoiditis has frequently developed after tonsil operations.

Pairy²⁰ reports a case of acute mastoiditis with lateral sinus suppurations and cerebellar abscess as complications of the operation for the removal of tonsils.

14. Lichtwitz of Bordeaux: Arch. Internat. d. Laryn., 1900, xiii, 480.

15. Harmer: Wien. klin. Wchnschr., 1900, xiii, 846.

16. Kobiak: Arch. f. Laryn. u. Rhin., 1906-7, xix, 320.

17. Caille, A.: Arch. of Ped., 1894, ii, 655.

18. LePlay, A.: Arch. gen. d. med., 1905, ii, 3280.

19. Ard, F. C.: Med. Rec., New York, 1909, lxxv, 383.

20. Pairy, L. A.: Lancet., 1909, i, 1821.

Deane, L. C.,²¹ reports the following case of infection following tonsillotomy. Two days after the operation there was pain and swelling in both wrists and the right ankle. On the fourth day there was pain in the precordial region. There was a murmur over the apex with irregular and rapid heart action. There was no history of measles, scarlet fever, diphtheria or rheumatism.

Huber²² reports the following case. Lateral pharyngeal abscess following tonsillotomy. Female, aged two years. Had postcervical adenitis, when eight months old. The abscess was opened and it healed in a short time, leaving a small scar. Tonsillotomy was performed for enlarged tonsils, and usual antiseptic after treatment was carried out. A few days later torticollis, considerable thickening of the tissues in the pharynx, laterally and to the right; subsequently suppuration occurred, with difficulty in deglutition. The lateral pharyngeal abscess was opened and this diminished. The torticollis persisted. Marked tenderness and swelling at the sight of the old scar in the postcervical region was present, later fluctuation. This was opened. Complete healing took place in two weeks.

Wishart²³ reports a case of hyperpyrexia and death after tonsillotomy. Autopsy showed a very extensive intestinal tuberculosis, acute nephritis, empyema of lungs and acute hepatitis. Death was evidently due to a virulent toxemia. Death came nineteen hours after the operation. The temperature reached 107 F.

Ballanger²⁴ mentions two very severe cases of streptococcus infection in about nine thousand cases.

Pierce²⁵ reports a severe case of infection resulting in permanent torticollis following a tonsillotomy with injury to the pharyngeal muscle.

The first case I have to report is one where death was due to infection following tonsillotomy. This occurred in the practice of L. L. Smead of Newton, Iowa, to whom I am indebted for the following history.

Miss B., school teacher, aged 27 years, of German descent. Was apparently well nourished but anemic in appearance.

Family History: Father died from septicemia following an injury. One sister died with hematuria, cause unknown. Mother living and well.

Personal History: Patient had always had trouble with her throat. She was subject to attacks of headache, indigestion and the "blues." At times menstruation was painful and scanty.

Present History: For four months preceding the operation did not feel well. Patient was anemic. One month before the operation suffered from follicular tonsillitis and some adenitis on right side of neck; there was also some enlargement of glands in the axilla. With the usual treatment for tonsillitis the inflammation subsided and treatment was instituted to overcome the anemia and improve her general condition. The glands became normal and her general condition was much improved. Her tonsils were large. She had difficulty in talking to her pupils. At night there was some obstruction to breathing. She was conscious of the act of swallowing. Tonsillotomy was advised. Examination of the urine was negative.

Operation: All instruments were boiled. The throat was cleansed by antiseptic sprays and gargles. Under local anesthesia the right tonsil was enucleated and the major portion of the left was removed. Because of hemorrhage the whole of the left tonsil was not removed. Patient bled very profusely and was weak from the operation and loss of blood.

The morning following the operation the throat and adjacent structures were swollen and reddened, with fibrinous exudate covering the cut surface. The glands of the neck were somewhat enlarged and there was great pain in swallowing. Pulse was 110. In the evening the temperature was 102 F. On the two following days the temperature ranged from 101 to 103 F. The throat and glands became greatly swollen. The fibrinous exudate did not change in size. On the third day

21. Deane, L. C.: California State Jour. Med., 1909, vii, 92.

22. Huber, F.: Pediatrics, New York, 1899, viii, 254.

23. Wishart, D. J. G.: Dominion Med. Monthly, 1909, xxii, 216.

24. Ballenger: Dis. of Nose, Throat and Ear, p. 416.

25. Pierce, N. H.: Trans. Section Larynx and Otol., Amer. Med. Assn., 1909, p. 109.

there was great difficulty in swallowing and breathing. Patient was delirious when asleep. Vision was dim. There was moderate vomiting. The submaxillary glands were enlarged. On the fifth day the quantity of the urine passed was diminished. Vision was still dim. Delirium was more pronounced. Some pus and bloody sputum was expectorated. On the sixth day all the lymphatic glands of the body were enlarged. Only a very little urine was passed. Delirium was more pronounced. Patient died in a convulsion during the afternoon.

A post-mortem examination was not made.

CASE 2.—In May, 1905, the patient, a male, aged about thirteen years, presented himself at my clinic.

Family history was negative. Personal History: He had had the ordinary diseases of childhood. A good history could not be obtained. He had suffered from occasional attacks of tonsillitis. He had had no attack for several months.

Present condition: Tonsils enlarged. No cervical adenitis. General health apparently excellent.

Operation: Tonsillotomy with a tonsillotome was performed under local anesthesia.

The patient was ordered to remain in the hospital for several days. The next day he left the hospital without notice. Up to this time he had had no trouble. Seven days after the operation I saw him again. Four days before I saw him, that was three days after the operation, he had ridden on his bicycle a distance of eight miles and back. It was a very hot day. That evening he did not feel well. The next day he had a very severe fever. Dr. C. B. Kimball of West Liberty saw the patient. He found the boy quite ill and advised that I be sent for as the trouble was evidently connected with the recent operation. Two days later I saw the patient and found the following condition: The remains of the tonsils were somewhat swollen and reddened. The cut surfaces were covered with a fibrous exudate. The pharynx was also inflamed. The condition of the throat was not bad. The temperature was 105 F. It had been intermittent. There had been a series of chills. Pulse was 160, very weak. Patient was delirious. Among the anterior border of the sternocleidomastoid muscle could be felt very easily a cord-like swelling. This is the only case of phlebitis where I have ever been able to detect this. On the left side was exophthalmos with panophthalmitis. On the right side was a well marked optic neuritis. The ear and mastoid seemed normal. Dr. Kimball's physical examination was negative. A diagnosis of septic phlebitis involving the internal jugular and extending along the cerebral sinuses to the orbital veins; accompanied by thrombosis of the orbital veins on the left and perhaps of the left cavernous sinus. A very bad prognosis was made. The relations of the boy were rather peculiar people. They were wealthy but decidedly obstinate. Under the circumstances it seemed best to place a nurse in charge and do the best possible thing for the boy. Water in large amounts and whisky were given by stomach and normal salt by rectum. No doctor saw the case after I was there. Daily reports by telephone showed an improvement in five days and in six weeks the boy was apparently well. I did not see him again but was told by his relatives that the stump of his left eye had been enucleated and had fair vision only in the right.

This case presents two very interesting points: 1. The extensive septic phlebitis with thrombosis. The phlebitis evidently extended along the palatine vein to the internal jugular, thence to the bulb, then either by the transverse and superior petrosal or the inferior petrosal to the cavernous sinus and thence to the orbital vein and ophthalmic veins. 2. The recovery from such an extensive severe condition. The age of the patient must have been quite an important factor in overcoming such an infection.

A similar case following phlegmonous tonsillitis has been reported by Seggel.²⁶

A robust soldier, aged twenty, developed an intense exophthalmos of the right eye with headache, chills, vomiting and intermittent fever, together with a violent phlegmon of the right tonsil. Almost simultaneously blindness and immobility

26. Seggel, K.: Klin. Monatsblat. f. Augenh., 1907, xiv, 129.

of the pupil with exophthalmos of the right eye set in, soon followed by the same symptoms in the left without exophthalmos. Two days after the exophthalmos the right internal jugular was felt as a hard cord. Under mercurial inunctions the patient recovered within two and a half months with atrophy of both optic nerves, total amaurosis of the right eye and preservation of a sector in the upper nasal quadrant of the left eye. The diagnosis was thrombosis of the orbital veins with or without thrombosis of the cavernous sinus.

CASE 3.—Male, aged five years, came under my care November 1, 1908. Was well nourished, very robust and apparently in perfect health.

Family History: Both parents alive and in good health. There was also one brother in good health.

Personal History: In August preceding the operation he had had whooping cough from which he had apparently entirely recovered. He never had any other diseases of importance. Tonsils were large and diseased. There was no cervical adenitis. Physical examination was negative. Urine examination negative.

On Nov. 29, 1908, tonsillectomy was performed. For one week preceding the operation the crypts of the tonsils were carefully cleansed and disinfected and disinfectant gargles were used. The night before the operation a laxative was administered. The morning of the operation he entered the hospital and in the afternoon was operated on. The most scrupulous care was used to see that everything was as aseptic as possible. A blunt pointed knife and snare were used to remove the tonsils. The tonsils were examined after removal. There was no pharyngeal muscle tissue adherent to them. The usual characteristics of chronically inflamed tonsils were observed.

The patient remained in the hospital for eight days and then returned home. During this time his temperature was not above 100 F. He had no cervical adenitis or any trouble of importance. During this time a gargle of hydrogen peroxid one-third and water two-thirds was used. The tonsil wounds were not cleansed in our usual way, using hydrogen peroxid applied with cotton on a probe, because of strenuous objection on the part of the patient. After the patient left the hospital the use of the gargle was continued.

Fifteen days after the operation the patient was brought to my office. The mother reported that the boy had been apparently well but on that day they noticed an enlarged gland on the right side of his neck. At the anterior border of the sternocleido mastoid opposite the angle of the jaw was a single enlarged lymphatic gland. It seemed to be the size of a small hazel nut. Temperature was normal. Calomel in small doses with ice packs locally were prescribed. Temperature was taken every three hours. For three days the condition remained about the same. Maximum daily temperature was 100 F. The boy was playing and eating as usual. During this time the pharynx surrounding the tonsillar region was reddened. There were no white spots on or near the tonsillar wounds.

On the evening of the third day, December 17, the boy's throat began to swell externally and became very tender. He refused supper. At 8 p. m. his temperature was 104 F. This fell rapidly to 101. I saw him at 8:30 o'clock. The neck was badly swollen so that the head could not be moved. The skin was stretched tight, was reddened. No enlarged glands could be detected. Calomel was again administered, ice applied continuously. During the night the fever was intermittent, ranging from 100 to 104 F. Pulse, 120 to 135. There were several chills. The next morning the boy was very ill and was sent to the hospital. At 1 p. m. under general anesthesia the neck was operated on. An incision five inches long was made anterior to the sternocleido mastoid and parallel to it. The muscles of the neck, both the sternocleido mastoid and the deep muscles, were found dark red in color, much swollen and mushy in consistency, not elastic as usual. They seemed friable. All the tissues of the neck were badly swollen and inflamed. Only one enlarged gland was found. That was the one that was detected several days before. It was about the size of a small hazel nut and was not broken down. This was removed. An incision was made posterior to the sternocleido mastoid muscle. The whole territory was thoroughly explored and irrigated with bichlorid solution. A drainage tube was inserted passing from in front of the sternocleido

muscle under it and out the posterior wound. Moist bichlorid packs were applied with bichlorid irrigation through the drainage tube twice a day. Alcohol rubs, and water in large amounts was given by mouth and the patient kept quiet in bed. Tincture digitalis and quinin suppositories were given. Most careful nursing was used. The condition of the neck was so entirely different from what I had found in other cases of infections of this region that I considered the case a very grave one.

I immediately associated with me in the case Dr. Robert B. Preble of Chicago, Dr. W. L. Bierring and Dr. Van Epps of Iowa City, and a few days later Dr. Wm. Jepson of Sioux City and Dr. Grant of Iowa City.

The condition was entirely a local one. The spleen, liver and lungs seemed normal. Associated with it was an exceedingly severe toxemia. For twenty-four hours following the operation temperature per rectum was 101.4 to 103.6 F. Pulse, 100 to 138. There was no discharge from the wound. On irrigating there was also no discharge. After the first day the temperature gradually improved and on the third day reached 98.8 F. On the second day the blood count was as follows: Leukocytosis 35,000; polymorphonuclear leukocytes, 90 per cent. On the fourth day the temperature rose gradually again to 103.2 F. and remained there. On the fifth day the temperature had not diminished. The blood count was as follows: Leukocytes, 25,000; polymorphonuclear, 95 per cent. The patient was rapidly weakening and the polynuclear differential count was becoming serious and a second opening of the neck was decided on. The muscles of the neck were exposed freely. Surrounding the drainage tube that had been in position was a dense white membrane. It was so firm as to prevent drainage. The deep cervical muscles presented the same appearance as at the first operation. In addition there were numerous bright greenish looking areas looking just like the green spots around shot punctures in ducks that have been dead several days in warm weather. These spots were the size of a fifty-cent piece to a silver dollar. There was no necrosis; there was no pus. The glands lying on the muscles and those in the neighborhood were not enlarged. There seemed to be no effort at all on the part of the organism to resist the infection. Dr. Jepson in his very extensive surgical practice had never seen anything like it. All who were present agreed that it was a very bad infection still local with gangrene of the muscles and but little effort was being made by the organism to overcome it. Because of the latter a bad prognosis was made. Following this operation the same treatment was carried out as before it, except the drainage tube was removed daily and a fresh one inserted. Following this operation the temperature rose and remained high for twenty-four hours when it gradually began to fall.

On the fourth day after this operation the temperature rose to 104.6 F., pulse to 150. Frequently the radial pulse could not be detected. The patient was emaciated and exceedingly weak. The bowels had been kept cleansed and normal salt enemas were frequently given.

The patient's condition was critical. It was evident he could not stand another anesthesia. As a last resort I opened the neck again widely and rubbed and washed the superficial and deep muscles with bichlorid, left the wounds open and packed bichlorid packings around the individual muscles. To my great relief his temperature steadily decreased and on the second day was normal. From this time on the temperature did not go above one hundred. The leukocyte count gradually increased and the differential polynuclear count decreased. The patient was exceedingly weak for ten days. He was able to leave the hospital January 25, one month and seven days after the date of his admission. Throughout the course of the disease there was no evidence of systemic infection. The infection seemed always to be a local one.

The question as to the lack of resistance shown by this patient being due to his whooping cough several months before was discussed. While every one seemed to think this a probable cause no definite opinion was expressed.

This was a unique case in the experience of all concerned. I have been unable to find a similar case in literature. It is very regrettable that the

material secured early for bacteriologic examination was lost. There is attached a copy of the clinical chart for the first fourteen days in the hospital.

In the last two cases of severe sepsis lack of resistance on the part of the organism seems to have been the prominent feature. Exposure to cold, hemorrhage and indiscretions on the part of the patient with the consequent diminution of resistance have been the most important factors in my cases of infection of mild degree also. The virulence of the organism is also a feature perhaps almost as important. An exceedingly virulent organism introduced into the tonsil wounds would certainly, with good resistance, produce much trouble. The damage that a virulent organism can do even with no operative procedure has been nicely demonstrated in two families in my experience during the last year.

In the first family there were the two parents and three children living under poor hygienic surroundings. In two weeks each member had trouble. One child had measles. She developed a suppurative otitis media and meningitis. Subdural drainage was performed but the patient died. Two days later I operated upon a second child that did not have measles and found extensive acute mastoiditis and a large extradural abscess. Recovery at the end of two months. The mother developed an acute otitis with acute mastoiditis, the father a peritonsillar abscess and the third child a very severe double sided cervical adenitis.

In the second family were two children living in the best of hygienic surroundings. A month ago one child was brought to me after an attack of tonsillitis to see if the tonsils should be removed. There was a very severe double sided cervical adenitis with some fever. Advice was given not to operate and ice packs prescribed. The patient is now apparently well and will probably be operated on in a month or so if in good condition.

A few days after I saw this child the second child developed tonsillitis, followed by meningitis and death.

CERTIFIED MILK.*

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WASHINGTON, D. C.

It is with some embarrassment that I appear before this body which should teach me rather than listen to me. But sometimes an old truth receives added force when seen from a new angle; sometimes an unfamiliar face or voice will give momentary attractiveness to threadbare statements. Another fact further emboldens me in appearing before you, and that is that in this age of specialization persons may tower above their fellow men in some respects and yet not understand what seem elementary principles to those in other lines. Some physicians have never had their attention called to some phases of the milk question. A distinguished

* Read at the meeting of the Chicago Medical Society, May 25, 1910.

physician wrote me only a few days ago regarding a score card for milk. He would assign twenty-five points out of a possible one hundred for the fat of milk, and twenty-five more for the solids not fat, making fifty (or one-half) for composition and leaving only fifty for freedom from bacteria, from visible dirt, from odors and from flavors and for acidity and untidy package. I presume that many of you will question that relative value given to fat and to solids not fat.

The first picture to be shown on the screen is the bottom of a beaker containing a pint of milk showing a large amount of dirt. This was from the regular milk supply of a prominent hospital taken within two months. The hospital physicians thought they had a good milk supply because no case of typhoid fever had been traced to it. None of them had seen where the milk was produced, and under what conditions, until I suggested a visit to the place and one of the physicians accompanied me. The Massachusetts Board of Health has recently issued a circular entitled "Dirty Milk and the Doctor," which contains this:

It is a fact to be regretted that physicians themselves, as a class, do not take the trouble to investigate the conditions under which the milk they drink is produced and the manner in which it is subsequently handled.

I once heard a physician advising some milk producers against gluten meal, on the ground that when a considerable portion of the corn had been removed the residue must be an inferior product. The fact is that in manufacturing glucose the starch, which is of minor feeding value, is removed from the corn and the residue has a higher per cent. of protein (a valuable expensive food) than the corn itself.

Another reason why I am willing to be here is that many milk producers distrust all health authorities or experts when the matter of milk is concerned, and there is a considerable propaganda in opposition to the teachings of science; I am always gratified at an opportunity to exert even a small influence against this feeling. These producers are inconsistent because when severe sickness attacks them or any member of their family they call the physician at once and trust him implicitly, but if he happens to be appointed a health officer or to say a word about the possible dangers of milk he is liable to be denounced in the most intemperate language by these very same persons. In this state a leading statesman has likened your health department to burglars, and has talked about "salary grabbers" in alluding to the dairy farm inspectors. In Massachusetts one can find in the agricultural papers and at agricultural meetings extremely bitter attacks upon the state board of health. I imagine that the same thing exists in every State in the country. This feeling is intensified by certain demagogue politicians and newspaper writers who hope to create temporary popularity by spreading falsehood and appealing to the ignorance and prejudice of the milk producers. A prominent veterinarian who preaches through the columns of a weekly newspaper to thousands of farmers once said:

City health boards imagine that milk producers are a lot of scoundrels and their barns hot beds of disease germs. Farmers as a class are neither knaves nor fools, and they need no city duds employed by health boards to come around to tell them how to manage their business.

Here is a sentence which I clipped from an agricultural paper, showing an extreme illustration of this feeling:

Doctors for both human and animal complaints are riding over the people defying common sense and the rights of citizens, and boards of health in cities are working with them to keep up the scare and make business for imbeciles.

Of course, the milk producers are, like the old English king, trying to sweep back the tide, and their course will be about as effective in the long run in blocking the advance of scientific work, but it is much better to get along pleasantly if possible and to progress peacefully, rather than to suffer the delays caused by fighting our way. We must remember that the majority of market milk producers are honest and well-meaning people; those who are hostile act through ignorance and prejudice, a prejudice sometimes created by misstatements of assumed friends catering to temporary popularity. Hence it seems to me that the medical profession has a duty to perform in actively spreading information and in explaining the whys of things, as well as merely standing for advanced sanitary ideas. I have sometimes queried whether or not more patient, persistent, elementary work of an educational nature by the medical profession would not do away with some of this misunderstanding. I do not know how it was years ago in Chicago, but I can imagine that some of the older gentlemen present can recall instances of intense hostility to bacteriology and the fine points of aseptic treatment, even among the physicians and surgeons themselves. Possibly you remember when pus forming was considered a natural process and physicians were distressed if a wound did not "discharge nicely" at the right time. And I can imagine the attitude which the old school gentlemen would have assumed had some young fellow, perhaps just out of college, with the latest knowledge but no actual experience, received some official appointment and summarily served notice on these old practitioners that they must change their methods or go out of business. Remembering this, can you not appreciate the feelings of many milk producers under modern conditions, and have more charity for their attitude?

Can you devise any plan of campaign that will spread the facts about the relations of bacteria to milk in such a way as to help allay prejudice, educate the producers and reduce the troubles of your city health department? I look upon such a procedure as extremely important, for I can conceive of nothing that promotes the efficiency of the law and the cause of progress so much as an intelligent people who understand the reasons for the law and, understanding it, have respect for it. Are we fully awake to our responsibilities on the educational side of this question? Is the popular misconception of the subject due to anything we may have done or omitted to do? Is it wisdom or good policy to stand too much on our dignity and allow the antivaccinationists and other antis to make all the noise and impress and prejudice the uninformed by the frequency and positiveness of their utterances? Of course, you know that there are many milk producers who are already well informed on these subjects. I would not want the impression to go out that I am representing all producers as

reactionaries or non-progressive, but expressions at many meetings and in many addresses and newspaper articles fully justify all that I have said.

Another reason why I am glad to be here is that it affords me indirectly an opportunity to show you something of the work of the market milk section of the dairy division of the Agricultural Department's Bureau of Animal Industry. You have all heard the old story circulated, especially among medical men, of the western woman who died of overwork, ignorance and neglect, while the Federal government promptly sent an inspector, on notice from her husband, that one of his hogs had a stomach ache. The story may have an element of truth, but it is an exaggeration, for the government is not entirely neglecting the interests of human beings. The whole modern market milk movement is a health movement, and in emphasizing this before an ordinary audience I sometimes use lantern slides contrasting infant mortality of breast-fed and bottle-fed babies in the city of Paris; also a chart showing the decline in infant mortality in the District of Columbia, and its relation to the adoption of a milk inspection ordinance.

You have asked me to say something about certified milk. From one standpoint, certified milk is largely a matter of definition. As the word itself indicates, certified milk is milk with a certificate, and the very essence of a certificate is that it comes from some authority other than the person or thing certified, and from a disinterested authority. A young man in search of a situation who presented a certificate of qualification signed by himself, a man who certified his own check, and the milk producer or dealer who certified to the quality of his own product would all be in the same class. Another essential feature of a certificate is that it shall be issued by some person or persons who know whereof they certify. If I take a sample of milk to a bacteriologist and chemist he can properly certify, after examination, about the composition and bacterial content of that particular sample, but he cannot properly certify to the ordinary product of my herd or to my ordinary dairy practices without taking samples himself and investigating my conditions. Usage, the only final authority as to the meaning of words, has decreed that certified milk is milk bearing the certificate of a medical milk commission. Anything else is fraudulent. It therefore happens that certified milk is *prima facie* a milk of superior quality, but there may be milk of a superior quality that does not bear the certificate of any medical milk commission. The public, however, as a rule, has no evidence upon which to base its opinion of this milk, and certified milk has a high clinical and market value on account of the certificate. Sometimes it happens that a producer guarantees his product to be of high quality, perhaps as good as certified milk, and his reputation may be so unimpeachable that his guaranty counts for as much as a medical milk commission's certificate, but guaranteed milk is not certified milk. Sometimes it may happen that a medical milk commission may be composed of physicians less critical than the members of another medical milk commission, and standards and requirements may vary. Bacteria standards vary from ten to fifty thousand per c.c. A state officer in a nearby state

opposes a state law to prohibit the mislabeling of certified milk, on the ground that the commissions of different cities might have different standards.

Three phases of the certified milk question deserve brief consideration: The first is that of composition. The various commissions whose standards have been published require from 3.25 to 4.5 per cent. of fat. This means about 8.5 to 9 per cent. of solids not fat, or 11.75 to 13.5 pounds of food in 100 pounds of milk. There is considerable agitation at the present time on the food value of milk. This is largely due to those interested in a certain breed of cows, to-wit, Holstein-Friesian, who claim that milk having 10 to 12 pounds of food in 100 pounds of milk has more food value than milk containing 13 or more pounds of food per 100 pounds of milk. The contention is based on the fact that as milk increases in total solids the fat increases faster than the solids not fat, so the proportion of solids not fat to total solids is higher in milk of lower composition than in milk having more total solids. The Holstein-Friesian breeders have found a number of medical gentlemen who father the idea of higher food value in milk containing less food material, and who believe that milk with 13 pounds of food per 100 and upwards has less vitality feeding value than milk with a smaller amount of food. This contention is being used with much effect in some places where there are statutory milk standards for the purpose of causing them to be reduced or abolished altogether. A strong movement is on foot in Massachusetts to abolish entirely a chemical standard for milk on the cry of "No standard but purity." In New York State one of the legislative branches has recently passed a bill reducing the statutory standard of 12 pounds of food in 100 pounds of milk to 11.5.

Without considering here the commercial phase of the question I desire to call to your attention the fact that a number of excellent medical gentlemen are preaching that milk with 11.5 pounds of food per 100 has more food value than milk with 12 or above. This is a question deserving of your consideration, and if the contention is sound a number of medical milk commissions should reduce their standard.

A second requirement of medical milk commissions is that all cows producing certified milk shall be tuberculin tested. This question is of much importance because of its relation to the general market milk proposition. One set of facts governs both kinds of milk. There is a trend toward ordinances requiring tuberculin testing of all cows that produce market milk. On the other hand, many dairymen are strongly opposed to such a test, although the movement is, on the whole, on the advance. Bitter agitations have taken place in a number of states over the question, and the courts have been called to pass on it in several instances.

A tuberculin testing ordinance was sustained by the state courts in Louisiana, but the dairymen served notice on the Board of Health that any attempt to enforce it would be contested in the Federal court. In Iowa the state supreme court has within a few days decided against a tuberculin testing ordinance passed by a city, on the ground that it interfered with the functions of the state departments. In Milwaukee, Wis.,

the milk producers sought to enjoin the city authorities from enforcing a tuberculin ordinance, on the ground that the tuberculin test is unreliable. This, so far as I am aware, is the first time that the scientific phase of the case was ever submitted to a disinterested judicial tribunal, governed by the formal laws of evidence. The referee to whom the case was referred repeated to the court that on the evidence presented tuberculosis is transmissible from the bovine to the human race, and that the tuberculin test is a safe and reliable means of determining the presence of the disease. The court sustained this decision and dismissed the injunction, when an appeal was taken to the supreme court. In the State of Illinois, not many hundred miles from here, a grand jury of milk producers reported to the court that the tuberculin test is dangerous and unreliable, and the judge ordered the report spread upon the court records. It is difficult to understand just why this matter upon which the scientific world is absolutely unanimous should meet with such opposition from milk producers, and how statements of fact are perverted. While making some inspections in this State last December I found a bright appearing young man in charge of a large dairy herd. I asked him if the cows had been tuberculin tested, and with considerable show of feeling he replied that they had not been, and furthermore that they never would be. I inquired of him regarding the positiveness of his statement and he replied that the "feller that discovered tuberculin had gone back on it," and that being so, there was no reason why he should allow it to be injected into the herd. I confess myself at a loss to understand why or how this young man should have got into his mind such a half truth regarding Dr. Koch; it could not have been a case of spontaneous generation. Some one must be deliberately spreading such half truths, and a writer has said that the "lyingest things are half truths." The full facts regarding bovine tuberculosis and tuberculin can be easily ascertained by an inquiry of his state experiment station, of the one at Madison, or of any other station in the country, or by reference to Federal bulletins, or to any authority not officially connected with state or government work. It must be admitted, however, that earnest and honest workers sometimes lose sight of relative value, and by distorting their perspective sometimes bring discredit to a good cause. The International Tuberculosis Congress in Washington, and a recent national meeting of workers for the suppression of tuberculosis, both have declared, without any dissenting votes, that tuberculosis may be transmissible from the bovine to the human race. Some who have studied the question statistically, however, say that about 98 per cent. of all cases of human tuberculosis are of human origin and only 2 per cent. of bovine origin. This suggests that 98 per cent. of our energies might be devoted to the suppression of human sources of the disease but it does not suggest an ignoring of the bovine source. Some people, however, magnify the 2 per cent. altogether beyond its proper proportion. It must be remembered that the 2 per cent. of cases of bovine origin are almost entirely infants and that the chances of an infant contracting bovine tuberculosis from its food are many times 2 per cent. Another attempt to discredit the work along this line seems to me to savor of a

trick in that in some very emphatic expressions against the possibility or probability of transmission of the disease from bovine to the human the word pulmonary has been smuggled in in a way to create a wrong impression. As I understand the situation no one claims that *pulmonary* tuberculosis exists in children to any great extent. In nearly every instance the disease is located in the bowels or digestive tract. Prof. Russell, dean of the agricultural college of the University of Wisconsin, testified at the hearing that something like 300 cases had been examined and the evidence that has been accumulated by numerous investigators under diverse conditions points very conclusively to the fact that a considerable percentage of tuberculosis in children, more particularly that of intestinal character, is to be ascribed to the ingestion of materials of bovine origin, presumably tuberculous milk. At first blush it seems strange that an animal can be badly diseased without showing external indications of any trouble. This has caused some skepticism relative to the tuberculin test, and a gentleman who poses as a peculiar and distinctive friend of the milk producer utters this misstatement: "The farmer knows his cows better than any veterinarian." But there are plenty of available pictures of animals supposedly sound which reacted to the tuberculin test with photographs of what a post-mortem revealed.

A third requirement for certified milk relates to the bacterial content. No milk producer questions the actuality of wireless telegraphy though he has to take on faith all that he knows about it; but when we talk about the invisible bacteria in his stable or in his milk pail: and then the possible effect on invalids or babies he at once becomes skeptical, and says he has drank milk all his life and never died. A correspondent of the *Marine Farmer* once said: "All this talk about bacteria makes me tired. I have drank extract of sheep manure to bring out the measles and am not dead yet." A former college professor says: "Too much has been made of the number of bacteria in milk. They are in the main friendly organisms and to a very small degree dangerous." But we believe you have the knowledge of experience in the sick room that milk with high bacterial content may be dangerous to human life under certain conditions although more experimental and research work along these lines is needed; consequently you want milk with as small a number of bacteria as possible, and you are willing to give a certificate to the producer who adopts such precautions as secure the desired result.

What are these precautions: simply cold and cleanliness? A trouble in applying this fact arises from the popular failure to appreciate the meaning of the word clean and the further fact that standards are constantly growing higher. The old time surgeon who lanced an abscess with his pocket knife did not consider himself unclean and if perchance he wiped the blade on his handkerchief he was not conscious of a filthy practice. I have recently had a startling object lesson in my own home on the subject of cleanliness. I had always given my better half credit for being rather exceptionally neat as a housekeeper and I still hold that opinion. But one day I sent home one of the new fangled vacuum cleaners, and the quarts of dust it sucked out of supposed clean rugs and hangings was a shock and when that dirt was put in the fireplace

much of it burned giving off an odor of burning organic matter that was still more startling. In view of such facts let us not be too severe with the milk producers. My comparisons show how easy it is for misunderstandings to arise when one is charged with being unclean.

A few actual pictures of some bad conditions would show you more vividly than words the conditions under which considerable milk is produced in this country and the reason for the agitation for bettering common market milk and especially the need for a clinical milk bearing a medical certificate.

You may ask how do such pictures compare with conditions here in Chicago. I spent a part of last November and December in some investigations along this line, working a few days with each of the inspectors and seeing a little of each of the milk producing sections. In every place visited the Chicago inspector and myself would visit every dairy we came to so far as the time would allow, so that there was no selecting of dairies and each inspector assured me that I saw a fair average of the conditions in his territory. Speaking in a general way. I found conditions which I should call bad, but everywhere there were evidences of improvement. Stating the results of my investigations in mathematical terms, resulting from the rating given on the score cards, 100 being perfect, I found:

In the twenties,	11.7 per cent. of the places visited.
In the thirties,	35.0 per cent. of the places visited.
In the forties,	43.0 per cent. of the places visited.
In the fifties,	9.0 per cent. of the places visited.
In the sixties,	1.3 per cent. of the places visited.

I have said that any dairy scoring less than 40 should be put out of business. If this were arbitrarily followed here it would result in stopping the shipment of milk from 46.7 per cent. of the dairies, or very nearly one-half.

Seventy-three per cent. were rated nothing for cleanliness of the stable yard. Fifty-nine per cent. were given a score of nothing for light. A score of nothing for ventilation was given to 42 per cent. of the dairies inspected. The scores for the construction of the stable other than noted above took a wide range. Generally speaking the floors were neither tight nor sound, being of ordinary planks more or less worn. Cement floors were rare. Walls and ceilings averaged a score rather low, being far from smooth or tight.

In the majority of cases cows are allowed to calve in the stanchions. The milk room in most of the dairies visited was simply a tank room where the milk is cooled. In many cases this was badly located, being at the corner of the barnyard or a hog yard or both. The light and ventilation of the milk houses was fairly good but usually the walls, ceilings and floor were admirably adapted for harboring dust and bacteria. In practically every case the milk utensils are washed in the kitchen of the house. No cooler was found in any instance, milk being cooled by being set in a tank of well water. Not a single narrow top milk pail was found in use or a single instance where special milking suits were used. Eighteen per cent. of the cows were given a score of

nothing for cleanliness and 14 per cent. more scored 4 or below out of a possible 10. Forty-six per cent. of the dairies inspected were scored nothing for cleanliness of the stable air at the time of milking. A score of nothing for cleanliness of milk house was given in 41 per cent. of the places visited. A prominent cause of criticism as regards cleanliness of utensils was due to failure to wash the agitator used for stirring the milk while cooling. While bottles and strainers were taken to the kitchen for washing the agitator was in many cases left hanging in the milk house until it had collected quite an accumulation of filth. The plunging of this up and down in the can of warm milk furnished a most excellent opportunity for inoculating the milk with bacteria, and on the principle that milk is no cleaner than the dirtiest thing with which it comes in contact this custom of failing to wash thoroughly the agitator every time it is used cannot be too severely condemned. Eleven per cent. of the dairies received a score of nothing for care and cleanliness of utensils.

My investigations impressed me with the magnitude of the work of keeping track of the milk supply of a great city like Chicago, with the frequent evidence of good work accomplished and under way, with the need of sixty inspectors rather than six, and with the consideration shown the producers by the inspectors. I failed to find where any producer had a just grievance against the health department.

But such conditions create a demand for certified milk which calls for better equipment and better methods. Pictures of such show a marked contrast to those of the other type. Such conditions ought to be held up to the producers as the ideal at which to aim. The difference between certified milk producers and other producers is only a difference of degree. But milk producers are in business to make a living and we must not increase the cost of production without at least holding open the door of hope for better returns. There is a tendency here among some of the newspapers to agitate for cheaper milk. This is wrong. Let the agitation be for better milk and for paying what it is worth. May the vast influence of the medical profession be exerted in this direction. The secretary of the Massachusetts Board of Health in his circular, "Dirty Milk and the Doctor" makes this direct personal appeal:

If it appears that increased cleanliness can be secured only by paying an increased price for milk, be yourself willing to pay the increased price, and advise your patients to do the same.

REPORT OF THE SECRETARY OF THE CHICAGO MEDICAL SOCIETY MILK COMMISSION* .

J. W. VAN DERSLICE, M.D.

CHICAGO.

Milk commissions are the product of the past two decades. Prior to that time there was practically no organized effort on the part of the medical profession for a better milk supply for the feeding of infants and invalids. The profession long had bewailed the fact that in the

* Read. at the meeting of the Chicago Medical Society, May 25, 1910.

cities it was impossible to have supplied a milk suitable for clinical purposes. The credit for the inauguration of this movement belongs to Dr. Coit of Newark, who first successfully launched certified milk as an article of commerce in his home city. To-day certified milk has a distinct place among the foodstuffs as an article of diet for infants and invalids. The clinical results obtained by the use of certified milk have been such that there has been developed a demand for this product not only among the pediatricians but the medical profession at large and to no little extent among the laity. This demand has developed in spite of the fact that to the naked eye there appears no difference between the certified product and commercial milk. In the use of milk there are not the differences manifested between the high grade and the ordinary which are usually quite obvious, as between eggs, fresh eggs and strictly fresh eggs.

The price of certified milk has acted as a deterrent to its use in many quarters where the mere financial outlay would ordinarily be but little thought of, yet a closer acquaintance with the mode of production of the various grades of milk would easily demonstrate to the most skeptical that the percentage of profit in the two grades of milk is far less in the higher priced than in the cheaper quality. The price of certified milk in this city is 15 cents a quart; in some of the other cities the price is 17 and 18 cents. If the price of certified milk be compared to the other commoner articles of diet in the infant and invalid dietary it will be found that certified milk ranks among the cheaper and that none of the proprietary foods may be fed so cheaply as can certified milk.

The production of certified milk from the viewpoint of the dairyman has not proven a valuable experiment. There are but few dairies producing certified milk that can show the same percentage of profit upon the investment as those producing commercial milk. Happily for the infants there have been and are many men of means interested in high grade dairies and dairy farms which has made the production of certified milk a possibility and by their experiences have made it possible for the small dairy to produce this grade of milk at a profit. The value of a good clean milk cannot be estimated. The medical profession is agreed that there is no other substitute for mother's milk which is to be compared with it.

The Chicago Medical Society Milk Commission has sent to each member of the society a copy of the contract which the dairies supplying certified milk must agree to before receiving certification. The milk commission through its members and inspectors keep a constant surveillance of the farms and their products, making sure that the letter of the contract is constantly adhered to. The Chicago Medical Society Milk Commission can report that during the past year there have been but few samples of milk taken from the wagon as it was delivered to the consumer which gave a count exceeding ten thousand bacteria per c.c. and that the major proportion had a count of less than five thousand, many less than a thousand and some as low as four hundred per c.c. Compare this to the hundreds of thousands and even millions which are constantly found in commercial milk.

At the time of the organization of the Chicago Medical Society Milk Commission there was but one farm supplying milk to Chicago of a grade equal to the requirements of this commission. Soon after the organization there were two other farms which met the requirements; these three farms have received the certification for the past year. During the past month two more farms have been added to the list, making a total of five farms which are now receiving certification. The commission is desirous of certifying to all farms which will produce a milk of the grade which the contract calls for. Every farm applying for certification has been carefully inspected by the commission and suggestions made as to the easiest and best improvements necessary for the production of certified milk. The requirements of certification by the commission are those standards which have been made by the Association of American Milk Commissions. The Chicago Medical Society Milk Commission has tried to keep itself free from all hobbies and theories and has limited its requirements to such as have been proven of practical value by experience. In Chicago there are and have been several varieties of certified milk. With many of these the certification means nothing; they bear merely the stamp "certified milk" and if certified to, bear only the certificate of the producers or of the distributors. The term "certified milk" is not protected in this state and it is possible for any one to distribute a milk bearing the insignia "Certified." It has long been the desire of the milk commission to have enacted by the legislature a law governing the use of this term but hitherto all efforts have been in vain. At present the commission sees a slight ray of promise in there being embraced within the pure food law a clause which shall limit the use of the term to such milk as is produced under the supervision of a regularly organized medical milk commission. There are now four states that have enacted such laws and it is to be hoped that Illinois will soon be added to the list.

The milk commission believes that by its example and precept it has been no small factor in the contest for a better commercial milk which is now being waged. The factor of public opinion is of vast import in the outcome of such a warfare; and the commission feels that in its demonstration of the practicability of the production of a milk of the high standard as the milk sold under its certification is no small factor in the education of the public to the necessity of clean wholesome milk.

CERTIFIED MILK COMMISSIONS.*

O. P. GEIER, M.D.

Secretary of the American Association of Medical Milk Commissions.

CINCINNATI, OHIO

All over this great country of ours, we are hearing the cry for pure milk. The secular press has been devoting much space to this subject. Medical journals are presenting it in its various phases, until I am sure

* Read at the meeting of the Chicago Medical Society, May 25, 1910.

you all feel that there can be absolutely nothing left to be said on this subject.

Municipalities are bending every energy towards this problem of a clean milk supply. It is truly a medical problem for it is the physician who appreciates the dangers of impure milk; who knows how to measure the amount of its contamination and adulteration; who knows what a ready carrier of contagion this product is; how its very composition favors riotous increase when once such contamination is allowed to enter it.

Statistics of mortality compiled by boards of health, health officers and government experts show that death pursues infants and children, when they have been partaking of milk contaminated by dirt, the germs of infectious diseases, diphtheria, scarlet fever, typhoid fever and tuberculosis. There is hardly a city of any size which does not report a diphtheria epidemic due to milk so infected. It is claimed that one-third of all infants die during the first three years of their lives and that 85 per cent. of these deaths occur among the bottle-fed infants.

Each city has its own peculiar problems as to its milk supply. In one instance it is the great distance that milk has to be hauled; in another, inadequate laws and standards; in another, inefficient supervision; but most all of these are traceable to the indifference of the public and the medical profession. For any city to attain an ideal milk supply, the consumer as well as the producer must do his part. Public sentiment must be aroused as to the dangers of an impure milk supply. Nothing has stood so much in the way of progress as the fact that health boards have been so frequently in the control of political machines.

Having thus passed in review a few of the many factors that enter into the securing of an ideal supply for our cities, I desire to show what part the Medical Milk Commission has taken in the crusade for pure milk.

In June, 1890, just twenty years ago, the Medical Society of the state of New Jersey at the suggestion of Dr. Henry L. Coit, appointed a committee of forty physicians, to study the relationship between mortalities and milk supplies and to secure the proper legislation looking towards an improvement of the milk supply. Failing in this direction, Dr. Coit conceived the plan of professional control over dairies whose product should at all times conform to definite requirements and standards. The plan was adopted in 1893 and the Essex County Milk Commission organized. Some months later, a dairyman by the name of Stephen Francisco signed a contract to produce milk under the supervision of this commission and thus the first dairy plant was established. The term certified was coined by Dr. Coit and copyrighted by Stephen Francisco with the understanding that any milk commission should have the right to its use.

The scheme for the production of this clinical milk is best outlined in the original statement from which I quote:

1. That physicians give their practical support to an effort conducted by a medical milk commission selected by a medical society which shall endeavor to

bring to the city a supply of milk produced under such regulations that purity shall be assured.

2. That approved and trustworthy dairymen, possessing honor, financial ability and dairy facilities shall be induced by reason of promised medical support and the increased price of their milk, to conduct their dairies, collect and handle the product in conformity with the code of requirements made by the aforesaid medical milk commission and imposed by it in due legal form.

3. That the duties of the commission shall be first, to establish correct clinical standards of purity for cow's milk; second, be responsible for a periodical and personal inspection of the dairy or dairies under its supervision; third, to provide for bi-monthly expert examinations of the dairy stock by competent and approved veterinarians and for the medical supervision of the employees by competent physicians. The milk produced shall also be subjected to periodical chemical analyses and to bacterial counts made under the direction of the commission as often as in its judgment is desirable. The experts employed by the commission shall render their reports to this body, which constitutes the basis of its certification of the product. The expense of examination and inspection shall be defrayed by the dairymen, but the members of the commission shall receive no pay for their services. The findings of the commission shall be published to the profession only. The milk thus produced shall be known as certified milk and be sold in containers bearing the date of milking and the seal of the commission.

This was the essence of what the first medical milk commission determined upon as its standards for certified milk. From time to time the standards for certified milk were raised and the supervision made more definite. In the seventeen (17) years following the organization of the New Jersey Commission, some twelve (12) others were organized in various cities throughout the country with the assistance of Dr. Coit.

A most important step in the clean milk crusade, however, was taken when in 1907 an association was formed comprising all the medical milk commissions then in existence. The first conference was held in Atlantic City June 3, 1907. The fourth annual conference occurs in St. Louis, June 6, 1910.

One clause in the Constitution of this Association gives the keynote of its life:

The purpose of this association shall be to federate and to bring into one compact association the medical milk commissions of the United States; to exchange views and to adopt uniform methods of procedure in the work of the medical milk commissions; to fix chemical and bacteriologic standards; to determine the scope of veterinary inspections and to foster and to encourage the establishment of medical milk commissions in other cities.

The officers and members of this Association have taken upon themselves more than their share of the burden of the pure milk crusade. The work reflects not only the scientific phases of the problem, but is largely constructive and educational. Our conferences have made clean milk production a science. Our educational propaganda has placed these results in the hands of earnest medical men in scores of communities. We have spread "the gospel of clean milk" as never before attempted by an association. In organizing this association we builded better than we knew. We filled a definite want; we were enthusiastic from the beginning and have grown more so by each year's results. Our task is Herculean and our resources practically limited to that energy which we dare divert from our professional struggle for existence.

In the scarce three years since our organization, medical milk commissions have been started in some 46 cities, totaling 68 in all. A large percentage of these are rendering signal service in their communities, not only in supervising the production of a safe infant milk supply, but they are using their influence to raise the quality of the general supply. We have been in correspondence with some 27 other cities, which have such organizations under consideration. The influence has been international, for Vienna, London and Canadian towns are taking similar steps. Colleges and public libraries deem our publications worth purchasing. The *Proceedings* of our Association have met with a wide demand. They have been sent as far as India, Australia and Honolulu. The Chief of the Dairy Division of the Department of Agriculture will bear testimony as to the impetus we have given the clean milk movement. The heads of the United States Public Health & Marine Hospital Service are loyal and enthusiastic members of our Association.

Once established, each milk commission should become a potent factor in the community, not only in the supervision of a limited supply of clinical milk such as certified, but its activity and study of the milk problem should stimulate the efforts of the local boards of health and naturally affect and eventually raise the quality of the total supply of those cities. The history of any well organized medical milk commission is that of careful study of the local milk problem by the leading physicians of a community. One or more model dairies are soon established. A demand for their product is created by educating the physicians of that community to the value of such a clean supply. The laity begin to demand milk of a better quality and are educated to pay a higher price for the same. The demand for any article soon creates a supply and dairymen will produce the quality of milk for which there is a real demand.

I will pause long enough to state that it is not the purpose of the medical milk commission to attempt to supersede the municipal machinery employed to look after the general milk supply. A board of health has its legitimate functions and the medical milk commission its own special objects. The board of health attempts to secure good milk and the enforcement of ordinances which prohibit the sale of unclean milk. The medical milk commission furnishes a milk which in its purity is so far above the requirements of the law that it is not under the law at all. This ideal milk is secured by voluntary cooperation between physicians and dairymen and the enforcement of surgical cleanliness throughout the process of milking.

The greatest menace to the pure milk movement lies in the fact that politically controlled boards of health are pretending to guard public health. Wherever this condition obtains, there would naturally be friction between the milk commission, striving honestly and fearlessly to improve local conditions and the board of health on the other hand which may be protecting special interests and individuals. In such instances the organized medical profession represented by the commission can so definitely mould public opinion that the pure milk movement in a city may become a campaign issue.

The public can be made to understand that the political party has failed in its duty and is using the power and money of the health department not to protect the lives of the citizens, but to further its own selfish interests. On the other hand when the officials of the health department are frankly and honestly lending their energies to improve civic health and life, the efforts put forth by a milk commission are generously welcomed. These two bodies then have the same end in view and there can be no friction.

When a larger percentage of Americans take upon themselves the full duty of citizenship, the control of health affairs will be taken from the hands of politicians. The milk commission will, however, always be a valuable adjunct to the municipal machinery, standing as medical censor of that part of the health department's work which refers to the milk supply. Taking all these factors into account, it is no wonder that the officers of The American Association of Medical Milk Commissions have labored so strenuously to extend the organization of milk commissions into so many communities.

If the clean milk movement, which is just beginning to show results in this country, is worth fostering; if a low infant mortality is worth striving for; if it is desirable to make child life healthier and therefore happier; if the philanthropy that attends free pure milk dispensaries is worth encouraging; if the cooperation of the entire medical profession in this large field of preventive medicine is valuable; if the divorcement of the health affairs of our cities from politics is commendable; then the American Association of Medical Milk Commissions has a definite function to perform in our national life and should receive some public support.

THE PAIN OF GASTRIC ULCER.*

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To discuss fully the diagnosis of gastric ulcer would take a much longer time than is allowed me this afternoon. I have therefore purposely limited my paper to the subjective symptoms, especially the pain. I do not wish to be understood, however, as minimizing the value of the laboratory findings as an aid in the diagnosis of this disease. There are few, if any, diseases, in which they are more important. In fact, in many obscure cases of ulcer a positive diagnosis is impossible without the finding of blood in the stools or stomach contents. The limitations of my subject, therefore, are purely arbitrary.

I wish first to discuss the characteristic pain of gastric ulcer: i. e., the pain described by the average patient with an uncomplicated ulcer.

* Read at the April Meeting of the Knox County Medical Society.

In obtaining a history of these cases the patient's first statement is usually that he has stomach trouble, or dyspepsia. He is apt to be indefinite at first, but if questioned closely the patient with ulcer will almost invariably tell you that he has pain. It is more than a feeling of discomfort, of weight or distress. It is a real pain. In fact pain is the most constant and most characteristic subjective symptom of gastric ulcer, and is present to a greater or less degree in a very large per cent. of cases.

The pain is usually described as a burning, gnawing pain, sometimes a dull ache. It is usually located in the epigastrium, frequently running up behind the sternum, frequently going straight through to the back. It is seldom general over the abdomen. The most characteristic thing, however, about the pain of gastric ulcer is its relation to food taking. It has a definite relation to meals, coming on late after the ingestion of food, usually thirty minutes to an hour or more frequently one to three hours, or even later. A patient has described it very aptly as an "empty pain," thus emphasizing that the pain came on late. What is the significance of this fact? It means that in gastric ulcer we are not dealing with a mechanical pain. Were it a mechanical pain it would be most intense immediately after eating, when the ingested food was coarse and hard before it had been divided into soft fine particles in the process of digestion. But this is not true. It is therefore not caused primarily by the food irritating the raw spot in the stomach, but by some other agent which is in the stomach, one to three hours after eating and not immediately after.

When food is taken, the stomach begins to pour out gastric juice containing free hydrochloric acid. This combines chemically in the process of digestion with the albuminous portion of the food. As long as the albumin in the food is in excess of the acid the acid will combine with it, and there will be little or no free hydrochloric acid. But after one or two or three hours the food becomes saturated with acid, and if the stomach continues to secrete hydrochloric acid it will remain in the stomach as an excess of free acid. This excess does not appear until after the food is saturated, which is late after meals, and it is this excess of free acid acting upon the exposed nerve endings in the ulcerated gastric wall that causes the characteristic pain in gastric ulcer. It is then a chemical and not a mechanical pain. We must remember that in 50 per cent. of the cases of gastric ulcer there is an excess of HCl. In 40 per cent. the amount is within the limits of so-called normal acidity, but with a tendency to hyperacidity. This leaves only 10 per cent. in which there is a sub-acidity and it might be said in passing that it is in this 10 per cent. that we find the great majority of cases which are undergoing carcinomatous degeneration.

The pain of ulcer is relieved by food taking, especially albuminous foods, and also by the taking of alkali. Many get the "soda" habit because it stops the pain. When food is taken into the acid stomach, the acid, by uniting chemically with the albumin, becomes non-irritating,

hence albuminous food has the same action as an alkali in neutralizing the acid which is causing the pain. When the excess of acid is neutralized the pain stops, showing again that we are dealing with a chemical pain. The pain is influenced by the kind of food taken, coarse, sour foods, with low per cent. of albumin increasing while finely divided albuminous foods decrease the pain. Coarse foods stay in the stomach a much longer time than do liquids or finely divided solids, and the stomach continues to pour out hydrochloric acid as long as it contains food, hence coarse foods by their long stay in the stomach cause an increased flow of gastric juice with more acid and more pain. The mechanical irritation from the coarse food has a minor influence on the pain. The albuminous foods, because they combine chemically with the acid have a tendency to keep down the excess of free acid, therefore relieve the pain. Thus we see that the characteristic pain of gastric ulcer is a chemical pain. That it comes on late after meals, is relieved by the taking of food and alkalies, and is influenced by the kind of food taken. I have purposely spent more time than might seem necessary on the relation of the pain to food-taking because this is the most characteristic feature of ulcer pain and from the standpoint of diagnosis, by far the most important. Tenderness on pressure is the usual thing. The point of tenderness varies with the position of the ulcer, though this is not a fast rule. It is most frequent over the pylorus, half way between the xyphoid and the umbilicus and a little to the right of the median line. A second point of tenderness just below the xyphoid is very frequently present. In fact, many claim this is the most characteristic point of tenderness. Tenderness over the tenth dorsal vertebra has been described. Tenderness is elicited as a rule only on deep pressure though in many old cases the tenderness is acute and on very light pressure; this, however, always makes one think of some complication, as a perigastritis or adhesions. Nausea and vomiting are seldom present in a case of uncomplicated ulcer, though they do occur as a reflex in very severe pain. However, this symptom is always strongly suggestive of pyloric obstructions.

I have thus far spoken only of the usual pain, the characteristic pain and in uncomplicated cases. There are exceptions of course, and these may be considered in two groups of cases. 1. Those in which the symptoms are ill defined or atypical, and 2. Those in which the characteristic pain is modified by complications. The first group includes a small per cent. of cases in which the symptoms are those of indefinite stomach trouble, the cases which are usually classed as dyspeptics. Cases in which the ulcer is at the cardiac end of the stomach may have pain while eating which is atypical. Some patients again may have no pain at all, the first symptoms of ulcer being the vomiting of a large quantity of blood. But these cases are rare. They almost always have pain. After ruling out everything else, in these atypical cases, we are compelled to come back to the stomach and yet our symptoms will not justify the diagnosis of gastric ulcer. We are then forced to fall back on the laboratory findings for diagnosis and only when we have found occult blood in the stools or in the gastric contents is the diagnosis of ulcer

possible. The second group in which the pain is modified by complications includes quite a large per cent. especially of the long-standing cases.

The most important complication is pyloric obstruction either from spasm of the pylorus or actual narrowing of the orifice by inflammatory swelling or cicatricial contraction. How does this modify the pain? In order to squeeze the food through a small opening the contractions of the stomach must be increased and this hyper peristalsis gives the sensation of colic. If the obstruction is due to pyloric spasm we have instead of the intermittent colicky pain of hyperperistalsis a very severe cramp-like pain caused by the spastic contraction of the pylorus on the ulcer located in its wall. This pain is much more severe than the chemical pain of uncomplicated ulcer or the colicky pain of cicatricial obstruction without spasm. In all cases of pyloric obstruction nausea and vomiting will eventually be present, if the obstruction becomes marked. With pyloric spasm in addition to the obstruction there is very severe pain, and in these cases the vomiting is most severe. Vomiting from gastric ulcer nearly always relieves the pain. It gets rid of the irritating acid in the gastric contents and also empties the stomach so that the colicky pain, as well as the chemical pain, is stopped. This is in marked contrast to vomiting which is reflex from disease in some other organ as in gall stones or kidney colic. With these the patient may vomit repeatedly without any sign of relief, because the stomach contents is not the offending agent as it is in gastric ulcer. This is one of our most valuable diagnostic points. It must always be remembered that vomiting does not give relief unless the stomach is at fault.

In the normal stomach the secretion of gastric juice ceases when the meal is digested, but in some cases of ulcer this is not true and we have a "continued secretion." These patients have more or less constant pain with only a short period of relief after taking food. With continued secretion the pain frequently comes on late at night or even before breakfast in the morning. It is frequently associated with nausea and vomiting, the vomitus consisting of hyper-acid gastric juice containing little or no food. Continued secretion is most frequently found in cases with pyloric obstruction and pyloro-spasm.

Perigastric adhesions when associated with ulcer so modify the pain that only by getting a very careful history are we able to arrive at a correct diagnosis. The pain may come on immediately after eating or while eating, especially if a large meal is taken. Filling the stomach causes a pull on the adhesions and pain. This may last until the chemical pain begins, and the patient may not be able to distinguish between the two. Or there may be the two distinct pains. The pain from adhesions will not be relieved by taking food or alkali. It may change with change of position. It is apt to be very severe when stomach is inflated for diagnosis.

Perforation is the most fatal of all the complications of gastric ulcer, hence the importance of an early diagnosis. Its onset is sudden

with severe pain in the epigastrium. The pain is much more severe than the usual pain of ulcer. It is frequently described as a boring pain. It is associated with symptoms of shock and followed in one or two days by the diffuse abdominal pain of general peritonitis. Acute tenderness in the epigastrium and distinct muscular rigidity are found on physical examination. These symptoms are much more marked than in uncomplicated ulcer.

We have thus far considered the symptoms of the typical cases, the atypical cases and the complicated cases of ulcer. Let us now take up the diagnosis. In differentiating between the pain of gastric ulcer and other conditions causing abdominal pain, we must remember that only in gastric ulcer (including duodenal ulcer) do we have a real chemical pain with a definite relation to food taking. If this is borne in mind the differential diagnosis of ulcer in most of the uncomplicated cases is simple. It is in the atypical and complicated cases that difficulties arise.

Conditions within the stomach which must be ruled out are acute or chronic gastritis, hyperchlorhydria, nervous dyspepsia, and malignant diseases. Acute gastritis gives severe colicky pain in the stomach with nausea and vomiting. It comes on after the ingestion of some toxic substance. It is an acute affair without previous gastric symptoms. Chronic gastritis seldom gives a real pain. The discomfort has no definite relation to meals and is not relieved by the taking of food or alkali. The discomfort from hyperchlorhydria comes on with the same relation to meals as gastric ulcer, and is relieved by the taking of food and alkali, but it is not pain. Hyperchlorhydria without ulcer gives a feeling of weight, heaviness, discomfort, but not real pain, and with hyperchlorhydria there is no local tenderness. In nervous dyspepsia the symptoms are irregular and indefinite, seldom real pain. Discomfort comes on usually while eating or immediately after. Patients are very prone to blame some article of food for their discomfort. In malignant diseases of the stomach there are frequently no symptoms in the early stages more than general malaise, and discomforts in the stomach with loss of appetite. Even after the carcinoma ulcerates through the mucosa pain is at first not very severe, with no definite relation to meals. Later pain becomes constant, very severe and with obstruction, colicky pain with nausea and vomiting begins. When a carcinoma starts in the base of an old ulcer or when it ulcerates through the mucosa while there is still free acid in the stomach contents it is very difficult even with the laboratory findings to make a positive diagnosis without opening the abdomen.

Of the conditions outside the stomach which must be ruled out the most important are the different forms of colic. Gallstone and kidney colic give a pain which is very severe, no relation to meals, comes on at irregular intervals, onset sudden, radiates to back and shoulder, or to pelvis, with local tenderness over gall bladder or kidney. Vomiting gives no relief. Appendiceal colic usually begins with pain in epigas-

trium but it usually becomes localized in the right side, comes on at irregular intervals and has no relation to meals. There is tenderness over the appendix.

Intestinal colic from strangulated hernia, intussusception, adhesions, malignant disease, acute enteritis, etc., all give general abdominal pain, which is colicky in nature and frequently very severe, with much shock. No relation to meals. Vomiting gives no relief. It is in fact an acute affair and not a recurrent pain as in gastric ulcer. In chronic enterocolitis, the condition is more chronic but the pain is general, it is long continued. Tenderness over the whole abdomen and other characteristic symptoms make the diagnosis comparatively simple. One form of intestinal colic, however, is very often confused with ulcer. It is the so-called "irritable colon." In this condition, while eating or a few minutes after eating the patient has a colicky pain in the upper abdomen. This is especially prone to follow heavy meals or taking of very hot or very cold food. This pain is soon followed by a bowel movement which gives relief, showing that it is not a stomach pain at all. The transverse colon lying against the stomach is stimulated by the filling up of the stomach or the cooling of the stomach wall and peristalsis begins, giving the colicky pain and the bowel movement. These patients frequently tell you that their food goes right through them because their bowels move immediately after eating. Cholecystitis is sometimes very difficult to differentiate from gastric ulcer, especially if there are adhesions between the stomach and gall bladder. But the pain is irregular, has no relation to meals and between attacks the patient is usually free from all discomfort, which is not true in ulcer.

Tubercular spondylitis is a condition deserving more than passing notice because it is so frequently overlooked. This disease causes abdominal pain but no abdominal tenderness. The pain is constant, of dull or shooting character, most marked after patient has been walking or stooping, increased by jar on head or back and very frequently relieved by lying down. The tenderness is over the diseased portion of the spine or the nerve roots near the spine, and not in the abdomen. Diaphragmatic pleurisy, acute pancreatitis, tubercular and malignant peritonitis, and the gastric crises of locomotor ataxia must all be ruled out by the absence of ulcer symptoms and a careful physical examination.

I have discussed this afternoon only the pain of ulcer but I want to again call your attention to the laboratory findings as an aid in the diagnosis of this disease, especially in the atypical and complicated cases, where they are indispensable in making an accurate diagnosis. If, however, in a given case we have a clear cut history of a chemical pain in the epigastrium, coming on late after meals and relieved by the taking of food or alkalies, the presumption is that we have a gastric ulcer and the laboratory findings are only used to confirm our diagnosis and guide us in our prognosis. The characteristic pain of gastric ulcer is the only abdominal pain that is a chemical pain and it is upon this fact that we chiefly rely in making our differential diagnosis.

ILLINOIS STATE MEDICAL SOCIETY

Official Minutes of the Sixtieth Annual Meeting Held at Danville, May 17, 18 and 19, 1910.

MAY 18, 1910—FIRST SESSION.

The Society met at 9 a. m., in Ferra Hall, and was called to order by the President, Dr. J. L. Wiggins, of East St. Louis.

Prayer was offered by Rev. Walter Aitken, pastor of the First M. E. Church.

Following the invocation, the Mayor of Danville, Hon. Louis Platt, was introduced and delivered the following address of welcome:

Mr. President, Ladies and Gentlemen of the Illinois State Medical Society: I take great pleasure in behalf of the citizens of Danville in greeting you and bidding you welcome. I want to say to you that during the short stay that you make with us you will find that the home town of Uncle Joe Cannon contains as good citizens as you will find anywhere in this country. (Applause.) You will find also that our local fraternity of physicians know how to entertain. I know that you gentlemen have no time to waste in listening to a man that is not elected to talk by the citizens, but to act. I will, therefore, take up none of your time, but I will present to your President a key to the City of Danville, and should any of you get in trouble, do not forget to call on me, and I will see you through. (Laughter and applause.)

Dr. Benjamin Gleeson delivered the following address of welcome as President of the Vermilion County Medical Society:

Mr. President and Members of the Illinois State Medical Society: In behalf of the Vermilion County Medical Society, I wish to extend to you a most courteous welcome. The medical profession of all Eastern Illinois join in welcoming you to Danville, as it has been fifty years since the State Society has convened in Eastern Illinois. We consider it a great honor to have you here as our guests, and we hope the sixtieth annual meeting at Danville will prove successful, as the chairman and various local committees have striven to make it so. We thank the officers of the State Society who have guided us in completing arrangements for your entertainment. Gentlemen, again, we bid you welcome. (Applause.)

RESPONSE TO ADDRESS OF WELCOME

President Wiggins—*Mr. Mayor and Gentlemen:* In behalf of the Illinois State Medical Society, I wish to thank you for this cordial welcome which you have extended to us. The most pleasant expression which has come to me since my arrival is the fact that the keys of the city have

been placed at our disposal. To some of us, who are in the habit of going home early, it does not mean so much (laughter), but there are a few gentlemen in all associations to whom the presentation of the key is the greatest boon. (Laughter.) However, sometimes they get home too late or in such a condition that the key is practically of no value to them. Now, Mr. Mayor, if it is not asking too much, will you kindly speak to the folks and tell them to leave the back door unlocked? (Laughter.) Some of us have brought our wives with us. You know, this use of the key we are really not used to, for everything that the medical profession has gained in the past has not been through the easy process of unlocking the door. As a rule, to get what we want, we have had to use a sledge hammer or a crow-bar.

By reason of the practical application of sanitary science, our income has been reduced to the point where it is shrinking rapidly; and now, Mr. Mayor, if you will just circulate the report that some of us have brought our wives with us, and we have not had a chance to do spring shopping, and if you will say to the neighbors that it is safe for them to leave the washing out on the line during the night, we will be under a thousand obligations to you. (Laughter.)

We have heard of Danville always, and we have associated it with the big guns which you have here; but in the future we will associate it, not with the exception, but with the average, and I want to assure you and the people of Danville that you possess, so far as we can learn, the highest general average of citizenship of which it has been our pleasure to be. We thank you. (Applause.)

REPORT OF THE COMMITTEE ON ARRANGEMENTS.

Dr. S. C. Glidden, chairman, made the following verbal report: The Committee of Arrangements has arranged to have the general meeting this evening in the First M. E. Church. We will have music; an address by the President of the Society; an address on Surgery by Dr. George W. Crile of Cleveland, Ohio, and an address by Dr. Charles G. Stockton of Buffalo, N. Y. Following these addresses there will be more music and also a general reception, and a buffet luncheon. Unfortunately, we are not able, on account of the length of the program, to entertain you at a banquet, which we would have been glad to have done. For the ladies to-day there will be a luncheon at the Golf Club at 12:30. To-morrow there will be a luncheon for the ladies at the home of Mrs. Glidden; also a reception at the home of Mrs. Glidden at 3 p. m. for all wives of the members of the Illinois State Medical Society.

In closing, I wish to thank the members of the local committee for their assistance, and also each member of the Vermilion County Medical Society. Every one has worked hard to try and give to all of you a pleasant and profitable time. There has not been a single man in the Vermilion County Medical Society who has not worked in accord with others to do everything he could to make it pleasant for you. Adjourned.

MAY 18, 1910—SECOND SESSION

The Society met at the First M. E. Church, and was called to order at 8:15 p. m. by the President.

The First Vice-President, Dr. Clifford U. Collins, of Peoria, took the chair, and President J. L. Wiggins, of East St. Louis, delivered his Annual Address. He selected for his subject "The Medical Profession; Present Conditions, and Future Problems."¹

Dr. George W. Crile of Cleveland, Ohio, delivered the Oration in Surgery. He selected for his subject "Surgical Aspects of Cancer, with a Further Report on the Hemolytic Test."²

Dr. Charles G. Stockton, of Buffalo, N. Y., delivered the Oration in Medicine. He selected for his subject "The Future in Medicine."³

A public reception followed the delivery of the addresses, and a light luncheon in the church supper room.

MAY 19, 1910—THIRD SESSION.

The general meeting was called to order at 4 p. m. by the President. Secretary Weis read the report of the House of Delegates. (For particulars see minutes of the House of Delegates.) The President appointed Drs. Pettit and Noble to escort the newly elected President, Dr. A. C. Cotton, to the platform. The retiring President, Dr. Wiggins, in introducing his successor, said: About twenty-five years ago, at a meeting of the State Society, I saw a very distinguished gentleman come down the aisle, and upon inquiry I found his name was Cotton. I thought it was a misnomer. Throughout the twenty-five years of our acquaintance I have found he was somewhat better than cotton; he was all wool and a yard wide. (Applause.) I congratulate you upon the fact that you have secured the services of this gentleman to preside over your destinies and deliberations the coming year, Dr. Cotton. (Loud applause.)

Dr. Cotton, in accepting the Presidency, said: Were it not for the fact that many of the members of the Illinois State Medical Society may have to hasten to catch their trains, and I had the ability and the wit, I might attempt to indulge in some remarks. Such occasions are rare, even to men of my age, but still the older we get the more charitable we become, and have pity for an audience in what might otherwise become a nuisance. The President, in retiring from office, has in a felicitous way, laid the burden of office upon my left breast, and told me to take it to bed with me, although he said at times it weighed heavily. Well, now, I have things on my chest sometimes at nights that are hard enough to bear without an extra burden. It suggests, however, all joking aside, that no one can accept the office, even though temporarily, of the presidency of the Illinois State Medical Society without receiving it thoughtfully in view of the burden of duties that it imposes. I have never yet talked with a retiring President of this Society, and I have known of many, who did not say he

1. For text of paper see THE JOURNAL June, 1910, p. 683.

2. For text of paper see page 9, this issue.

3. For text of paper see page 1, this issue.

laid down the gavel with a feeling of relief, and he is fortunate if it is not accompanied by a feeling of regret for duties not well performed. So that the possession of such a distinguished honor, and I speak it with all sincerity, that may be sought by a man in the hey-day of life, comes to a man on the downhill slope with a feeling of responsibility, not accompanied with any hilarity.

I shall endeavor to do my duty as I understand it, and if I may be congratulated by the hearty applause that has greeted my introduction, a year hence, I shall not be sorry that my friends put me into this position. I thank you, because that is the proper thing to say, but whether my wife would say the same thing or not, I do not know. (Applause.) I got a very affectionate telegram from her yesterday, which I have in my pocket, reminding me it was my sixty-third birthday. Some of you have seen sixty-three birthdays, but not many of you, and it brings with it something more than the satisfaction of an emotion to stand before his fellows in a distinguished position like this. There is something more that goes with it.

I think I may say, because I did not hear the retiring President say it, although I know he would because he said it to me to-day, that the Society should be congratulated upon this magnificent record-meeting under peculiarly trying circumstances, namely, its proximity to the meeting of the American Medical Association at St. Louis, which has kept many of the members away from this meeting. It was predicted that this would not be a very well-attended meeting on that account, but I believe the attendance is almost record-breaking. Of course, the retiring President cannot escape the responsibility for having made this meeting a success. The local committee, with its chairman, cannot escape the responsibility of arousing enthusiasm that brought the members. The program presented for discussion and the officers who prepared it cannot escape their share of responsibility for the success of this meeting.

If there has been some slight turbulence, some slight asperity, it is easily explained by scientific men who know that Halley's comet's tail has brushed the terrestrial atmosphere, and I congratulate myself that Halley's comet is headed away from us and won't get back again during my administration. (Laughter and applause.)

Again, I thank you. I hope for as hearty support as my predecessor has received. I will endeavor to do my duty. (Applause.)

There being no further business to come before the general meeting, on motion, the Society adjourned to meet at Aurora in 1911.

MINUTES OF SECTION ONE.

MAY 18, 1910—FIRST SESSION.

Chairman—Dr. W. H. Gilmore, Mt. Vernon.

Secretary—Dr. Frederick Tice, Chicago.

The section was called to order by the chairman.

Dr. J. F. Percy, of Galesburg, read a paper entitled "The Medical Treatment of the Pelvic Diseases of Women from the Standpoint of the

Surgeon," which was discussed by Drs. Collins, Stremmel, Bowe, Grinstead, Barrett, Marcy, Will, and in closing, by the essayist.

Dr. T. M. Aderhold of Zeigler, read a paper entitled "Observations in Two Thousand Blood Examinations for Hemameba Malariae," which was discussed by Drs. Brown, Pfeiffenberger, Ochsner, Munson, Hultgen, and in closing, by the essayist.

Dr. S. T. Robinson, of Edwardsville, read a paper entitled "Some Diabetic Obiter Dicta," which was discussed by Drs. Woodyatt, Turek, and in closing, by the essayist.

Dr. George N. Kreider of Springfield, read a paper entitled "Unusual Cases of Appendicitis," which was discussed by Drs. Bevan, Eisendrath, Babcock, Bacon, Fuller, Brown, Harsha, Pfeiffenberger, Korsell, and in closing, by Dr. Kreider.

The chairman appointed as a Committee on Nominations to nominate officers of Section One for the ensuing year Drs. M. S. Marcy, H. C. Lovewell and C. W. Lillie.

On motion, the section adjourned until 2 p. m.

SECOND SESSION.

The section reconvened at 2 p. m., and was called to order by the chairman.

Dr. J. F. Hultgen, of Chicago, read a paper entitled "The Leucocyte in the Diagnosis, Classification and Prognosis of Pulmonary Tuberculosis," which was discussed by Dr. Butterfield, and in closing, by the essayist.

Dr. E. A. Graham, of Chicago, read a paper entitled "Fat Embolism, with Report of a Fatal Case," which was discussed by Drs. Kanavel, Lewis, and in closing, by the author of the paper.

Dr. W. T. Mefford, of Chicago, read a paper on "The Technic and Value of the Wassermann Test in the Diagnosis and Treatment of Syphilis," which was discussed by Dr. F. G. Harris.

Dr. A. M. Stover, of Chicago, gave a talk on "Blastomycosis," which was illustrated by numerous stereopticon slides.

The next order was a symposium on Diseases of the Joints, and papers were read as follows:

"The Bacteriology and Pathology of Joint Infections," by Dr. E. E. Irons, of Chicago.

"Neurological Considerations of Joint Diseases," by Dr. Archibald Church, of Chicago.

"Joint Diseases from the Orthopedic Standpoint," by Dr. John Ridlon, of Chicago.

The symposium was discussed by Drs. Porter, Hecht, Fairbrother, Beck, Ochsner, and in closing, by Dr. Ridlon.

Dr. George W. Webster, of Chicago, read a paper entitled "Pellagra," which was discussed by Drs. Pollock, Brown and Cohn.

Dr. J. E. Coleman, of Canton, read a paper entitled "Gall Tract Infection," which was discussed by Dr. Turek.

On motion, the section adjourned.

MINUTES OF SECTION TWO.

MAY 19, 1910—FIRST SESSION.

Chairman—Dr. S. C. Stremmel, Macomb.*Secretary*—Dr. Dean D. Lewis, Chicago.

The section was called to order by the chairman at 9:50 a. m.

The Committee on Nominations for Section Two recommended the election of the following officers: Chairman, Dr. Allen B. Kanavel, Chicago; Secretary, Dr. M. P. Parrish, Decatur.

On motion, the report was adopted.

Dr. B. C. Corbus, of Chicago, read a paper entitled "Persistent Infections in Specific Urethritis in Relation to the Penile Urethra," which was discussed by Drs. Horrell, Baird, Fisher, and in closing, by the essayist.

Dr. E. C. Franing, of Galesburg, read a paper entitled "Ectopic Pregnancy, with Report of Fourteen Cases," which was discussed by Drs. Green, Collins, Christie, Dudley, Bacon, Barrett, Korsell, Buford, Sauer, and in closing, by the essayist.

Dr. E. V. L. Brown, of Chicago, read a paper entitled "Recent Contributions to Our Knowledge Concerning Sympathetic Ophthalmia."

Dr. William L. Ballenger, of Chicago, read a paper entitled "The Rationale of Infections of the Nasal Accessory Sinuses."

Dr. E. C. Dudley, of Chicago, read a paper entitled "A Practical Measure in the Prophylaxis of Post-Operative Cystitis," which was discussed by Drs. Sauer and Miller.

Dr. Edward C. Rosenow, of Chicago, read a paper entitled "Bacteriemia, with Special Reference to Endocarditis."

Dr. F. E. Schurmeier, of Elgin, read a paper entitled "The Early Efficient Surgical Treatment of Skull Fractures," which was discussed by Drs. Buford and Rogers.

On motion, the section adjourned until 2 p. m.

SECOND SESSION.

The section was called to order at 2 p. m. by the chairman.

Dr. J. W. Van Derslice, of Chicago, read a paper entitled "Gastro-intestinal Infections of Infants," which was discussed by Drs. Brewer, Cheney, and in closing, by the essayist.

The Committee on Nominations presented the following report of officers for Section One: Chairman, Dr. J. E. Coleman, Canton; Secretary, Dr. E. B. Cooley, Danville.

On motion, the report was adopted and the gentlemen were declared duly elected.

Dr. Cassius C. Rogers, of Chicago, read a paper on "Symptoms and Treatment of Exophthalmic Goiter," which was discussed by Drs. Walsh, Davis, Norbury, Hultgen, Schrager, Buford, Mix, Moyer, and the discussion closed by Dr. Rogers.

The next in order was a psychopathic symposium.

Dr. H. Douglas Singer, of Kankakee, read a paper entitled "The Study of Mental Disorders."

Dr. Eugen Cohn, of Anna, read a paper entitled "The Prevention and Treatment of Insanity."

The symposium was discussed by Drs. Norbury, Moyer, and in closing, by Dr. Cohn.

Dr. A. E. Prince and Dr. W. G. Bain, of Springfield, contributed a joint paper entitled "Tuberculosis of the Ear, Throat and Nose," which was discussed by Dr. Ritter, and in closing, by Dr. Bain.

Dr. Henry R. Harrower, of Chicago, read a paper entitled "The Relations and Clinical Significance of the Urinary Acidity," which was discussed by Dr. Ritter.

Dr. J. E. Allaben, of Rockford, read a paper entitled "Report of Two Cases of Acute Perforating Gastric Ulcer, Requiring Gastrojejunostomy as a Secondary Operation."

On motion, the section then adjourned *sine die*.

OFFICIAL MINUTES OF THE HOUSE OF DELEGATES.

THE SIXTIETH ANNUAL MEETING, HELD AT DANVILLE, ON MAY 17, 1910.
FIRST SESSION.

The House of Delegates met at Ferra Hall Tuesday evening, at 8:15, and was called to order by the President, Dr. J. L. Wiggins, of East St. Louis.

The Secretary called the roll, and ninety-four responded.

The President stated that last year a Committee on Credentials was appointed to pass upon the qualifications of delegates, and he thought it would be a good idea for such a committee to be appointed this year.

Dr. W. L. Noble, of Chicago, moved that a committee on credentials be appointed by the chair, consisting of five delegates, two from Cook County, and three from the counties outside of Cook County. Seconded and carried.

The President appointed the following as a Committee on Credentials: Drs. E. W. Weis, chairman; W. L. Noble, C. H. Lovewell, W. O. Ensign and Ralph Wheeler.

Dr. W. O. Ensign moved that where neither delegates nor alternate for any county is present, the members of that county medical society may select a man to represent them from among those who are present. Seconded.

Dr. W. L. Noble rose to a point of order, stating that last year a motion prevailed that delegates should only be seated when they presented credentials signed by the secretary and president of their respective county societies.

After discussion by Drs. Noble, Brown, Mammen, Ensign, Wheeler, Harris, Noble, the chair ruled that the action of the House of Delegates of last year could not bind the action of the house this year; that the House of Delegates this year must pass upon the qualifications of its own members.

After further discussion by Drs. Lydston and Wheeler, Dr. Noble moved as a substitute for the motion of Dr. Ensign, allowing members

present from the different county medical societies to choose their delegates, the following: That no delegates shall have seats in the House of Delegates except they have credentials signed by the secretary and president of their respective county medical societies. Seconded and carried.

Dr. H. B. Ward and Dr. W. J. MacNeal, representing the University of Illinois, extended a very cordial invitation to the Society to visit the University.

On motion of Dr. Carl E. Black, the invitation was referred to the local committee of arrangements for the purpose of having a conference with the officers of the sections and to report to the society later.

On motion, the Society took a recess to permit the Committee on Credentials to pass upon the qualifications of delegates. On reassembling, the chairman of the Committee on Credentials read the report, which, as amended, was adopted.

Dr. Bradley, of Galesburg, moved that a committee of five be appointed by the chair, to whom shall be referred all resolutions. This motion was seconded by several, followed by cries of No! No! Dr. Noble demanded a roll-call, with the result that sixty-four favored the motion and thirty-six were opposed to it. The motion was declared carried.

The chair appointed on this committee Drs. Pettit, Bradley, Burns, Corwin and Murphy.

Dr. J. W. Pettit gave notice of the following amendment to the Constitution, to be voted on at a subsequent session:

Section 3, Article IX. That at the election of officers at the session of 1910, we elect a president, who shall serve the ensuing year, and also a president-elect, who shall serve for the following year; thereafter at each annual election the president-elect shall enter upon the duties of his office one year from the date of his election.

At this juncture, the Second Vice-President, Dr. J. E. Stubbs, was called to the chair, and President Wiggins delivered his address to the House of Delegates.

On motion of Dr. Ensign, the address of the President and the recommendations contained therein were referred to the Council for consideration, and to report back to the Society at a subsequent session.

THE PRESIDENT'S ADDRESS.

To the House of Delegates of the Illinois State Medical Society.

GENTLEMEN:—The first question which presents itself to a newly elected president is, "What are my duties?" By consulting the constitution and by-laws governing this society, I found that "He shall be the real head of the profession of the State during his term of office." While this is especially comforting to one who appreciates the honor of an election as president of a society such as ours, I wish to register my unqualified dissent as to its possibility under its present growth and development. Continuing, it states, "And as far as practical, shall visit by appointment, the various sections of the State, and assist the councilors in building up the county societies, and in making their work more practical and useful." This is explicit, but its attainment is disappointing. The newly elected president, usually taken from the ranks, has but little conception of when to begin or what to do after beginning. As a consequence, the greater portion of his term is occupied in learning facts with which he should be familiar previous to his

induction into office; for as I assume that, to be in fact the real head of the profession, presumes a familiarity with all matters of moment affecting the past and present of our society, in truth, the ability to enlighten and lead. For this reason I wish to reiterate and emphasize the recommendation made by my predecessor that we adopt the plan instituted by the American Medical Association of having the president-elect commence his active duties one year after his election. In furtherance of this idea of efficient results, which I assume is the object hoped for, I would recommend for your consideration the advisability of creating for our State society the office of State Organizer, such as is now maintained by the American Medical Association in the person of Dr. McCormack. I would recommend that our constitution and by-laws be revised; that some sections which are obscure be made more specific. This applies particularly to those sections relating to the powers and duties of the Council having full control of the affairs of the Society when we are not in session. It is implied that they represent us in all matters affecting our interest, but this is not specifically stated. There should be no uncertainty on this point. They should be given authority to speak and act in the name of this society.

For years there have been misunderstandings between our representatives in the Council and our State Board of Health. Much of the friction engendered could have been avoided had these bodies been cooperative instead of antagonistic. I would advise that Article VI of the Constitution be revised so as to include the president and president-elect of the society and the president and secretary of the State Board of Health as ex-officio members of the Council.

I find that one of the weak points in our county societies is an almost universal inclination to shirk or shift responsibility. The individual fears to take the initiative in matters pertaining to the common good. This is occasioned by fear of being singled out for ridicule or criticism by the interest affected, or by having his motives misconstrued by members of the profession in the vicinity. I find that in nearly every county some imposition is complained of which in most instances could be removed if our members were less self-conscious. I believe it were well to impress upon our component societies the fact that the burden of responsibility primarily rests upon them. I would recommend that as a possible solution the county societies have authority to appoint a committee which may be designated as a medico-legal committee in its broadest sense, which shall have power to act in all matters affecting local interests in the name and by authority of the county society.

The University Lecture Bureau recommended by ex-President Baum and instituted under recommendation of my predecessor, Dr. Pettit, is producing excellent results. The fear expressed by some that it would discourage efforts on the part of local men who might fear criticism through comparison with the more eminent essayists, is disproved. On the contrary, it has acted as a stimulus, and I find that the contributions and discussions have assumed a much higher intellectual plane than heretofore.

During the year I have visited 17 county and 3 district societies, complying with the request of each, relative to subject of paper or address. The meetings as a rule were well attended. In all, the interest manifested was gratifying. My experience is similar to all who have given the matter of county organization thought: that is, that the life of a society is in the keeping of its secretary. I might also mention the fact that in no instance did I find that the secretary suffered financial loss by reason of the time he devoted to the interest of his society.

Respectfully submitted,

J. L. WIGGINS, President.

Dr. J. E. Stubbs moved the following:

That the President shall appoint one month preceding the convening of the State Medical Society a credential committee of five members, whose duty it shall be to meet two hours before the calling of the House

of Delegates to order, to pass on the credentials of the elected delegates. The motion was seconded and carried.

Dr. McDonald moved to amend Article V of the Constitution.

Dr. Glidden, on behalf of the Committee of Arrangements, after conference with the officers of the sections, stated that it was impossible to accept the kind invitation of the University of Illinois which had been extended to the Society.

Dr. Corwin moved that a vote of thanks be extended to the university for its kind invitation. This motion was seconded and carried.

The report of the Committee on Medical Education was called for, and was read by Dr. J. F. Percy, in the absence of the chairman of that committee, Dr. Norbury.

Dr. Mammen moved that the report be adopted. Seconded.

The report was discussed by Drs. Egan, White, Van Derslice and Noble, after which Dr. Noble moved as a substitute that the matter be deferred until the last meeting of the House of Delegates, and that a copy of the same be placed in the hands of every delegate for their perusal to-morrow. Seconded by several.

As there was some doubt in regard to the vote, a roll-call was demanded, with the result that forty favored the substitute and thirty-one were opposed to it. The substitute was declared carried.

Secretary Weis presented his report to the House of Delegates.

Dr. Corwin moved the adoption of the report, with the thanks of the House of Delegates for his efficient services.

Seconded and carried.

SECRETARY'S REPORT.

To the House of Delegates of the Illinois State Medical Society.

GENTLEMEN:—Your secretary begs leave to present the following as his report of a part of the work done by him during the year. The following is a financial statement of monies received from all sources from April 31, 1909 to May 1, 1910:

Adams	\$ 155.00	Efingham	\$ 50.00
Alexander	37.50	Fayette	20.00
Bond	13.50	Franklin	15.00
Boone	50.00	Fulton	47.50
Brown	60.00	Gallatin	40.00
Bureau	205.00	Greene	35.00
Calhoun	0.00	Grundy .....	.00
Carroll	60.00	Hamilton	60.00
Cass	37.50	Hancock	77.50
Champaign	187.50	Hardin .....	.00
Clark	2.50	Henderson	20.00
Clay	25.00	Henry	75.00
Christian	90.00	Iroquois-Ford	120.00
Clinton	55.00	Jackson	50.00
Coles	70.00	Jasper	40.00
Cook—Chicago Medical So-		Jefferson	95.00
ciety	4,617.50	Jersey	47.50
Crawford	70.00	Jo Daviess	69.50
Cumberland	42.50	Johnson .....	.00
DeKalb	43.00	Fox River Valley Med.	
Dewitt	45.00	Ass'n.—Kane-McHenry ..	230.00
Douglas	76.50	Kankakee	92.50
Edgar	10.00	Kendall	30.00
Edwards	22.50	Knox	132.50

Lake	\$ 80.00	St. Clair	\$ 220.00
La Salle	187.50	Saline .....	.00
Lawrence	57.50	Sangamon	215.00
Lee	61.00	Schuyler	12.50
Livingston	105.00	Scott	22.50
Logan	52.50	Shelby	42.00
McDonough	55.00	Stark	5.00
McLean	\$ 158.00	Stephenson	16.50
Macon	180.00	Tazewell	87.50
Maconpin	127.50	Union	50.00
Madison	47.50	Vermilion	347.50
Marion	52.50	Wabash	45.50
Marshall-Putnam	36.25	Warren	62.50
Mason	70.25	Washington	57.50
Massac	35.00	Wayne	40.00
Menard	37.50	Whiteside	60.00
Mereer	40.00	White	27.00
Monroe	38.75	Will	112.50
Montgomery	50.00	Williamson	95.00
Morgan	115.00	Winnebago	80.50
Montrie	39.00	Woodford	53.00
Ogle	45.00	Subscription	77.60
Peoria	167.50	Committee of arrangements	
Perry	57.50	(Quincy)	344.39
Piatt	30.00		
Pike	90.00		
Pope .....	.00		
Pulaski	15.00		
Randolph	57.50		
Richland	35.00		
Rock Island	207.50		

(Correct.)

Sept. 27, 1909—Returned to
Randolph 2.50
\$11,724.84

M. L. HARRIS,
N. H. STEALY,
W. K. NEWCOMB,
Auditing Committee.

In the above list there are six counties that have not made a remittance during the year. In the most of these I feel confident that it is due to oversight on the part of the secretary, for four of them were in good standing last year.

Following my usual custom of recent years I sent blanks to all the secretaries of the component societies requesting a report of all members in good standing by November 15. This request was generally complied with and it is from this report that most of those that were suspended were dropped from our list of members.

It is again gratifying to be able to report the onward progress of medical organization in our state. When we take into consideration the fact that the ground has been pretty well covered and that the acquisition of a new member means considerable effort on the part of our officers.

It is especially pleasing that our increase has been over 200 per cent. more than our losses. We gathered into the fold during the year four hundred and three new members (403), reinstated sixty-six (66); we have dropped from membership upon the recommendation of the component secretaries two hundred and twenty-one (221), which includes all removals from the state. Death has decreased our membership by forty (40). (This being exactly the same number as last year.)

If we desire to continue this ratio of increase of members until all eligibles in our state have been secured, the logical conclusion must be that every individual member of the society must make it a matter of duty and business to urge his neighbor to join the society.

To assist in this movement, by increasing the interest of meetings in the component society, the Council at its October meeting, acted upon the suggestion

of President Pettit by adopting a Lecture Bureau, instructing your secretary to act as the manager of the same.

In pursuance of this project I caused to be published in the JOURNAL a notice of the Bureau, also the publication of a list of volunteer lecturers of which a choice was to be made by the program committees. The following is a list of the counties and lecturers assigned through this Bureau:

Bureau—M. L. Harris, Chicago.	Knox—J. R. Pennington, Chicago.
Geo. A. Zeller, Peoria.	Lake—A. E. Halstead, Chicago.
Boone—Frederick Tice, Chicago.	Lawrence—W. K. Newcomb, Cham-
W. A. Pusey, Chicago.	paign.
Carroll—J. H. Stealy, Freeport.	Livingston—Fred A. Besley, Chicago.
Clark—H. B. Hemenway, Evanston.	J. W. Smith, Bloomington.
Clay—J. L. Wiggins, East St. Louis.	McDonough—Geo. A. Zeller, Peoria.
Christian—J. L. Wiggins, E. St. Louis.	Morgan—J. L. Wiggins, E. St. Louis.
Douglas—J. W. Hamilton, Mt. Vernon.	M. L. Harris, Chicago.
F. P. Norbury, Kankakee.	Macon—A. C. Cotton, Chicago.
Fulton—H. C. Mitchell, Carbondale.	Moultrie—Carl E. Black, Jacksonville.
Greene—Hugo Ehrenfest, St. Louis,	Mason—J. H. Bacon, Peoria.
Mo.	Ogle—A. C. Crofton, Chicago.
Hamilton—J. L. Wiggins, East St.	J. W. Pettit, Ottawa.
Louis.	Richland—Willard Bartlett, St. Louis,
Iroquois—Ford—A. C. Cotton, Chicago.	Mo.
John Ridlon, Chicago.	St. Clair—Hugo Ehrenfest, St. Louis,
Jo Daviess—Milton H. Mack, Chicago.	Mo.
Jackson—Willard Bartlett, St. Louis,	Sangamon—Carey Culbertson, Chi-
Mo. Jesse S. Myers, St. Louis, Mo.	cago.
Jefferson—C. E. Black, Jacksonville.	Whiteside—Frederick Tice, Chicago.
	Will—Frank Billings, Chicago.

The thanks of this society are certainly due to all of the above who are members of our society and especially due to those men from St. Louis, who are not members of our society.

If this Bureau increases in popularity as it should, the benefits to the society will become very great. In this connection I desire to call the attention of the secretaries to the rule laid down by the Bureau, especially as regards the element of time in sending in requests. The Bureau also requests the names of more volunteer lecturers in all parts of the state.

I also desire to report that the program committee held a meeting in October last and prepared the program for this session upon the instructions passed by the last House of Delegates.

This program being a radical change from former years it has caused considerable confusion, owing principally to the ignorance of the change by the members at large. If this change has been productive of a greater attendance this year this House of Delegates should repeat its instructions for the coming year. If not, then there should be another change.

I also desire to report that President J. L. Wiggins, during the interim, instructed me to issue credentials to delegates to the United States Pharmacopeial Association, which held its meeting at Washington, D. C., on the 10th inst. The delegates being: Drs. N. S. Davis, Wm. E. Quine and H. B. Hemenway; alternates, Charles E. Chapin, of Bloomington, and C. W. Lillie, of East St. Louis.

The President further instructed that I issue credentials to Dr. J. F. Percy of Galesburg, as a delegate to the Association of Medical Colleges, which was also held in Washington.

Owing to the adoption of the motion by the last House of Delegates and that there should be no error in the presentation of proper credentials, your secretary sent out several circular letters to each component society calling attention to the motion. I also caused to be printed credential blanks which were sent out in triplicate to every secretary. I also urged the adoption of some by-law that would allow every county to be represented in the House.

Upon the order of the Council, at its October meeting, a new checking system was entered into for the payment of all obligations incurred by the society. All

orders for money from the general treasury are now drawn by the secretary upon presentation of bills that are approved by the Council or an officer empowered to do the same. A full report of this system will be made at the end of the fiscal year.

Your secretary finally reports that he has attended every Council meeting held during the year, as well as the meeting of the committee on program.

Respectfully submitted,

E. W. WEIS, Secretary.

Dr. Carl E. Black presented the report of the Council.

It was moved and seconded that the report be adopted as read. Carried.

REPORT OF THE COUNCIL.

To the Members of the House of Delegates of the Illinois State Medical Society.

GENTLEMEN:—In accordance with the instructions of the by-laws of the Illinois State Medical Society, it becomes my official duty as Chairman of the Council, to report the work done during the interim since our last annual meeting.

The Council has held four meetings since the last annual meeting. The first was held in Chicago on the first day of July, 1909; the second in Chicago on the 14th day of October, 1909; the third in Springfield on the 6th day of January, 1910, and the fourth in Chicago on the 5th day of April, 1910.

LOCAL SOCIETIES.

The Council is pleased to be able to report increased activity and efficiency among our local societies. While there are a few exceptions, in the main the county societies are stronger, have more and better attended meetings and are more thrifty than ever before. The secretary's report will give you the details of membership, but we desire to give you some facts from the report of the local secretaries.

First District.—Councilor Stealey, of Freeport, sums up the condition of his district by saying:

There still exists an indifference among our secretaries which I hope will be overcome through the instrumentality of working of our Secretaries' Association. I hope, too, that this new and novel association may outline the secretaries' work so it will be less burdensome than heretofore. The secretaries do not manifest the interest in their work that they should in order to give us the data with which to supply our chairman with his full requirements. Upon the whole I feel that there, has been throughout the district an increased enthusiasm to do more efficient work.

Dr. J. Sheldon Clark, Secretary of the Stephenson County Medical Society in this district, gives the following interesting item:

We have 41 members in good standing. Our average attendance is fair, but not what it ought to be. We have in our society members who keep up their dues regularly, but scarcely ever are present at our meetings. There is some excuse for non-attendance on the part of our men who live in the country towns, but here in Freeport there is little or no excuse for absence from meetings. We have had considerable disaffection of members on account of our attempt to regulate the question of contract practice, such as is given by the "Eagles," "Owls," and kindred organizations. Also the question of local newspaper advertising has caused trouble. A few persist in keeping their names out of the public prints in connection with reports of illnesses, such as operations, etc., while others are just as active in "getting in" the news columns. We are coming to the opinion that each man should be his own arbiter in the question of newspaper publicity.

Dr. J. F. Kretsinger, of Ogle County, in this district, furnished the following item:

During the year 1909, four regular meetings of the society were held. The attendance and interest have greatly improved over any previous year of the society. The papers read before the society were from men outside and were mostly from physicians of note. The present year we expect to make a still better report and we trust we will be able to add more new members to the society.

Second District.—Dr. J. W. Pettit, Councilor for the Second District, furnishes a detailed report of each county in his district. This report is so condensed and yet complete that it seems quite worth while to present it to the House of Delegates as a model which the Councilors might work to.

My report as to general condition of component societies in my Councilor District is as follows:

Whiteside has an active membership of 28. Bi-monthly meetings, average attendance of 12. Conditions have improved over last year in point of attendance and interest. It is not practicable to get a large attendance at any given meeting at any point in this county for the reason that the transportation facilities will not permit. The personnel of the meeting therefore changes very materially from meeting to meeting, according to the place at which it is held. There are 7 physicians in the county who are not members. Five of these are homeopaths, two eclectic. All physicians who are graduates of regular colleges are members.

Bureau County: Meetings held semi-annually. Attendance fairly good. The secretary informs me that the difficulty is in securing a good program. This will probably be obviated to a large extent by our lecture bureau. There are 29 physicians in this county who are not members of the society. Three are not practicing; four are retired; three have belonged and been dropped for the non-payment of dues; three are homeopaths; six are new men, who will probably join, and two are not eligible. Financial condition of society good.

In Grundy county the interest during the past year has not been up to the standard of previous years. This has been due to some local dissension in Morris, the county seat. The differences have been adjusted and the outlook for future work is good. This has been heretofore one of the live societies in the district and largely due to the activity of the secretary. The membership of the society is now 14 with 11 who are not members. Two of these are not eligible, and some of them are not very desirable.

Livingston County: This is one of the live counties in my district; 47 members; condition of society good. Progress always good. Attendance averaging more than 50 per cent. The success of this society is due more largely to its secretary, who always has a good program, and adopted the plan several years ago of having outside essayists which accounts in large measure for the success.

In Lee county for two or three years there has been a noticeable lack of interest in society work. This has been largely due to the inactivity of the secretary. The new secretary is infusing life and interest. This society has had difficulty in securing papers from members, and the delinquencies in payment of dues have been largely due to lack of interest in the program. I am quite sure that the trouble in this county will be largely overcome by the new plan of university extension work. The secretary does not report the present membership, but during the year the society has gained one, one removed, one died. Three are delinquent for non-payment of dues.

Woodford county has 22 members in good standing, five who are not members, four of whom are eligible (one homeopath and three regulars). Here again has been difficulty in securing interesting programs. There has been some friction growing out of local jealousies. I believe that with infusion of outside aid this society can be put on a better basis. Changes in membership during the past year: Gained one, one removed, two died.

Kendall county has been one of the dead counties in my district for several years. This is greatly due to the fact that it is a small county and poor transportation facilities. Last year the society was practically dead. I made them a visit, reorganized them, and they are now on a fairly good basis. Probably as good as could be expected in a county with so small a membership. Number of members in good standing, 11; gained, 1; removal, 1; died, none; and one member will probably be dropped for misconduct. It will always be a difficult matter to keep up interest in this county, as it is more convenient for most of the members to go to Aurora than to attend meetings in their own county.

La Salle county is in good condition, owing to the activity of its secretary. Total number of members in good standing, 83. Twenty-seven are not members; 10 of whom are not eligible. In this county we have several large towns that also have branch societies that do good scientific work. There are two regular meetings annually, and the membership is usually about 40 to 60 per cent. During the past year gained 6; removal, 1; died, 3; otherwise lost 1.

I have visited Whiteside county and shall visit prior to the state meeting, Marshall-Putnam (of which I cannot now send you a report), Livingston, LaSalle and Woodford.

Third District.—Dr. M. L. Harris, Councilor for the Third District, submits the following report:

During the past year all of the county medical societies comprised in third district have been in a flourishing condition.

Cook County (Chicago Medical) Society has held its meetings regularly once a week throughout the year with the exception of the summer months. A large number of new members have been taken into the society but the total net gain for the year I was not able to obtain from the secretary.

Will county society reports 43 members, a gain of 4 over the previous year. Meetings have been held once a month on the second Tuesday. The average attendance has been 25, never less than 20 and at times as many as 40.

Lake County Medical Society has 36 members. Seven new members were added during the year. Four were lost by reason of moving away. Successful meetings have been held throughout the year.

Kankakee county society reports a loss of 4 men by death and moving from the county and an addition of 2 new members. This society was unfortunate by reason of losing its secretary, Dr. A. Kenaga, who died recently.

During the year I have visited the outside societies where I have made talks on organization work as well as presenting scientific papers. I have also furnished a number of gentlemen from Chicago who have attended meetings in my district and presented scientific papers. I think the general interest throughout the district has been better than any previous year.

Fourth District.—Dr. J. F. Percy, Councilor for the Fourth District, reports as follows regarding his District:

I herewith submit report of Councilor District No. 4: The twelve counties comprising this district, on an average, are in better condition than during last year. Henderson, Stark and Schuyler counties offer the greatest problems because of geographical conditions. Henderson county has a meeting in May, and will probably decide to con-

tinue their organization, as far as electing officers, etc., is concerned, but will attend the meetings of the counties nearest them; the southern part of the county meeting with Knox and the northern with Warren. Stark county is doing better than before.

Fulton county is our banner county. A movement has started there along political lines that has spread to Knox county. The sentiment back of this movement is to elect men to both houses of the legislature that will stand only for scientific medicine.

The only exception, in my district, to the criticism which is common regarding the State Board of Health is found in the statement of Secretary Hall, of the Henry County Medical Society, who states that the secretary of the State Board of Health is more popular in Henry county than any officer of the State Medical Society. The secretaries repeat what is not unusual in their reports, and that is that it is difficult to get the members to interest themselves in the program. This is true of Peoria also. This seems strange, when that large and apparently flourishing society, with all its opportunities, is considered.

Rock Island county is considering the question of a medical library, and also debating the question of raising the dues from four to seven dollars. All of the counties in district No. 4 have sent their reports, except Henderson county, and as I have had considerable correspondence with every man in the county, I know the situation there very well. Schuyler county keeps up their organization, but are practically doing no work.

The most hopeful thing is the work being done in Fulton and Knox counties. A great deal of the work in Fulton county is due to the energy and loyalty of the physicians of the county to the Illinois State Medical Society. This movement has spread to Knox, and as a result, it is expected that at election time these counties will be heard from politically in an effort to elect those who will endeavor to bring Illinois back to the position it once occupied along scientific lines.

Fifth District.—Dr. J. Whitefield Smith, of Bloomington, presents the following report:

I herewith desire to make a report of the condition and standing of the medical societies of District No. 5, comprising the following counties, Sangamon, Menard, Logan, Tazewell, Dewitt, Ford and Iroquois.

The report of these counties in the central part of the state is somewhat encouraging, as compared with former years. While there has been no unusual amount of activity on the part of any component society of this district, yet there can be no doubt, but that the effect of organization is being felt among the members.

There are a great many good physicians and surgeons throughout the central part of the state that should be found among the ranks and enrolled with a list of the members of the Illinois State Medical Society, but the medical organization of the state should not be discouraged with the small growth, and nearly every one of the counties of this district have increased numerically since the last report.

Perhaps the best way to emphasize these facts would be to call attention to the several component societies by reviewing something of the interest manifest since the last report.

The Tazewell County Medical Society for several years has flickered like a "tiny blaze upon a bed of dying embers," now flashing up, now fading away, until it was almost imperceptible, but during the last year it has blazed up like a flambeau and bids fair to continue to be a bright and shining light among her sister stars of the component societies of the Illinois State Medical Society. I attended a meeting of the Tazewell County Medical Society which met at Morton, Ill., July 20, 1909. While there were not very many in attendance, yet all seemed interested and discussed medical and surgical topics with much enthusiasm. This society numbers 24 in good standing; 3 failed to pay their dues. There are 20 physicians in the county not members of the society, 16 of whom will be eligible to membership according to the secretary's report. Meetings are held quarterly at different points in the county. The next meeting will be held in Pekin, April 12, 1910.

Iroquois-Ford: The medical society of these two counties is doing some very thorough and efficient work now, and during the past year. They record on their roll of members a total of 59. They have four meetings a year as follows: Paxton, first Tuesday in March; Gilman, first Tuesday in July; Gibson City, first Tuesday in October; Watseka, first Tuesday in December. They gained two new members and lost two members by physicians moving out of county.

Mason: According to the information furnished, there are 18 members of the Mason County Medical Society, and 4 physicians in the county who are not members. The last meeting was held April 4, at Mason City, Ill., in which members from the Menard and Cass counties societies were invited to take part in the meeting. This county society has never been very strong, yet there is an element in the county that believe in organized medical effort and are willing to work toward the betterment of the medical profession.

Dewitt: The secretary, Dr. C. W. Carter, of Clinton, Ill., furnishes me with information of which the following is the synopsis: There are 15 physicians in good standing belonging to this society and 14 physicians residing in the county who are not members. The following quotation from the secretary gives a great deal of encouragement: "Until last year interest and attendance were declining, more recently the society has been more active and attendance at meetings has been greater." I attended the meeting on January 18, held in Clinton, Ill., and while there was a small attendance, yet the members showed a great deal of earnestness and interest in medical affairs.

Sangamon: The brief report handed me by the secretary of Sangamon County Medical Society leads me to believe that this is one of the best counties of the district. It is the largest medical society, having approximately 100 members in good standing, and the secretary advises that the society is satisfactorily active. This society meets at the Lincoln Library, Springfield, Ill., on the second Monday of each month. The society lost one of the old members this year, Dr. L. L. Leeds, Lincoln, Ill.

McLean: The total membership of the McLean County Medical Society is given by the secretary as 75. During the last year this society has taken on a little more interest than in former years. This is due, no doubt, to the fact that the members are kept in little closer touch with the workings of the society by means of the publication of a

Bulletin which contains an abstract of the papers read, together with an account of cases presented and the discussions, etc. The society meets at the City Hall, Bloomington, Ill., the first Thursday of each month, except July and August. Dr. Wiggins, president of the State Medical Society, attended the February meeting of this society this year and delivered a splendid address.

Logan: I wrote to the secretary of Logan county for a report of this society, but so far have failed to receive it. I also urged the necessity of receiving it by the first of April, so that it might be presented at the meeting of the Council. So far as I am aware, the Logan County Medical Society has increased in interest rather than otherwise, during the last year or two. The members of this society have entertained the Brainerd district society on one or two occasions and they have seemed very much in earnest in advancing the cause and work of the medical profession.

Menard: I am very sorry also to note that I have no report from this society. The secretary was urged of the importance of having the report ready for this quarterly meeting of the Council. So far as I have been able to ascertain through conversation with some of the members of the Menard County Medical Society, while the society remains small numerically, they have some good zealous men in the profession in the county who believe in medical ethics and medical organization for the betterment of the profession, not only in their county but throughout the state.

Sixth District.—Dr. Carl E. Black, Councilor for the Sixth District, reports as follows:

The conditions in this district are not what your councilor would wish to be able to report. In two counties the existence of a medical organization is little more than nominal. In these two counties the number of physicians is small and for two or three years practically no meetings have been held excepting those organized to meet with your councilor or some other visiting officer of the state society.

We seem to have arrived at a difficult point in organization; namely, devising of ways and means of enabling these local units, especially the weaker ones, to establish and maintain an actual interest. In many instances the society has not created any feeling of practical value among its members. We must in some way lead our members to regard their county society as a necessary part of their professional life. There has been a wonderful improvement in this respect during the last five years, but there is room for further work along this line. There is no doubt that the rising generation of doctors is far more interested in association together than the passing generation. We will not have ideal county societies until the majority of our members regard local society membership as an essential. Several of the secretaries in this district had pertinent general remarks in their reports which I consider quite worth while repeating.

Morgan: General character, similar to that of the other county societies in the state. The ordinary activities of the society consist of the presentation of papers and their discussion at monthly meetings that have taken place during the past year. One open meeting was held at which the hygiene of milk production and delivery was considered. One clinical meeting was held at Passavant hospital with a good attendance and considerable interest. One of the monthly meetings was given over to a testimonial banquet for Dr. Norbury. The society has made no great bound in progress during the past year, yet on the other hand, there has been no retrograde movement. The present condition can be characterized as good. There are 22 eligible men in the county who are not members and 9 who are not eligible. I would suggest that perhaps a change in the meeting time from evening to day with the introduction of clinical features in the morning, luncheon and an early afternoon session would be the best for all concerned and might be the means of increasing attendance, especially among the out of town members who now but seldom attend a meeting of the society. The average attendance last year was about 14 members.

Pike: Our meetings are interesting when we can get the members out, but a great many of them have to come overland and don't make the effort. We tried it quarterly for a while, but frequently would not have a quorum, so gave it up and at our last October meeting only had 9 members and 2 visitors. It will probably not be much better at our next, with the national and two state meetings so near. I am trying the plan of not assigning special members for papers or addresses, for perhaps out of a half dozen only one would come, but request every member to come prepared to report a case or read a paper, consequently there is plenty doing to keep us busy for the full time, besides it gives all a chance. Our members are quite prompt in payment of dues.

Cass county is in serious need of help in order to keep together at all, in fact the county society at present is practically dead; seems impossible to maintain an interest even among the members. Cannot say wherein the trouble lies, unless it be indifference to the welfare of the profession at large. It seems almost impossible to get them to attend meetings, or take any part in them if they do. Have kept trying to maintain an interest among members to attend and take part, but I am discouraged at the results. Character of work done by the few was fair, but we need help.

Brown: The society is limited in numbers, it being represented by a small county with 16 physicians in all. Four of these are not in affiliation for reasons best known to themselves. Of the enrolled membership only 6 attend society meeting regularly and participate in the program, leaving 6 members who are indifferent to the prosperity of the society and rarely if ever attend. The society at present is lacking in interest, it being difficult to secure a quorum at regular meetings without introducing features of special interest.

Adams: The interest in the society is well sustained, and as usual, has been increased by the visits of our professional friends from Chicago. The inauguration of the Lyceum Bureau will be of great assistance. Average attendance between 25 and 30. All the regular meetings were held, with three special meetings and a successful picnic. The society maintained a medical library the past year supplied with the indices from the Morgan county branch. We hope to secure an assembly room in our public library, which will make the maintenance of the library much easier.

Madison: We have a society that is doing good work, both in a social and scientific way. The attendance varies from 25 to 40 at each meeting. Harmony in the entire profession of the county has been stimulated. We are gaining in influence and membership, although work along that line is needed in the southern and eastern part of the

county, viz, Collinsville, Troy, St. Jacob, Highland and Alhambra. We think that the time is coming when every eligible doctor in the county will be a member of our society.

Macoupin: The work of the Society is going very well. Present conditions best they have ever been, thanks to work of former Secretary H. H. Pattison. I would like some one to find a way to get members to not neglect to pay their regular dues. A great many have failed to pay 1909 dues.

Seventh District.—Dr. J. Q. Roane makes the following report for his district:

The condition of the various county medical societies in this, the Seventh District, remains much the same as last year. There has been some increase in the total number of members.

In 1907 there were 217 members in the twelve counties embraced in this district. In 1908 the number increased to 257. In 1909 the number of members amounted to 275, or an increase of 18 over the previous year.

Clinton County Medical Society remains the banner county of the district by having the highest percentage of total number of physicians of county as members.

The societies in Macon, Marion and Christian counties are in a flourishing condition and doing excellent work. Those in Shelby, Effingham, Pratt and Clay do only reasonably well. Those in Montgomery, Fayette, Moultrie have had a rather flickering existence in the past and more can be said of what they do not do than of what they do accomplish. This is the first year I have been able to report an organization in Bond county and even now the condition is so unstable that I feel rather guilty in saying such a society even exists. However, I still have hopes that they will do better in Bond county, and as I begin to understand their difficulties, can do more to assist them.

I would suggest that in regard to medical organization, every effort be made to strengthen the bond of unity with and between the various county societies and the state society.

I wish also that we had a more inclusive name for the state organization than that of society, since the county organizations are similarly termed.

Eighth District.—Dr. W. K. Newcomb, of Champaign, Ill., submits the following report of the Eighth District:

The situation in the Eighth District gives indication of general improvement, although there are isolated instances where the county organizations seem to have fallen behind. In the counties actively engaged in society work, the showing is good, especially in Champaign, Vermilion, Coles, Douglas and Richland.

Richland, considering the small number of medical men in the county, is perhaps the banner county. They hold meetings every two weeks, and have been able to present and maintain an excellent program for the season.

Coles county reports a very active condition and great interest is manifested on the part of the members.

Lawrence county has taken up the matter of organization and is doing much better this year than last.

Cumberland county has also made some improvement, as they are now to hold their regular meetings, and the membership list has been maintained. This is considered highly gratifying, as two years ago it was practically impossible to secure attendance sufficient to transact society business.

Two counties in the district, Edgar and Jasper, although organized, present a rather difficult problem as to management. It would probably be advisable during the coming season to send lecturers and organizers from the society list to try and revive interest in these two counties.

Two counties, namely, Edgar and Lawrence, have failed to name delegates to the state society, an oversight that will probably be remedied before the state meeting.

The total footing of members of the district of 337, shows an aggregate loss from the number reported last year but this is no doubt owing to the number of physicians who have not paid the annual dues, who will be reported at the state meeting. The individual aggregate for all except three of the counties shows a gain. With the exception of the portion of the district noted the condition of the district is quite satisfactory.

Ninth District.—Dr. H. C. Mitchell, of Carbondale, submits the following report from the Ninth District:

Of the twenty-three counties in the Ninth District, nineteen have reported. Of this nineteen reporting, five have done excellent work for the past year. All of them have held regular monthly meetings and most of them have been doing post-graduate work of a high order. Seven other counties have done good work, held regular meetings monthly, had many good papers read and many interesting cases reported before them. Seven other counties have done fair work only. Their meetings, have not been regular and it has been an up-hill pull for them to keep up an interest. I find the greatest trouble in these counties is lack of proper activity on the part of the secretaries. With a live secretary any county society can live and thrive and do good work. The societies doing the best work are those meeting monthly.

Many of the societies in the ninth district have been inviting talent from outside of their districts, and in most instances it has been a source of inspiration to them.

Of the nineteen counties reporting there is a total membership of 356. All the counties do not report the total number of physicians in their counties, but of those reporting, 205 are not members of the state society, making total membership of about three-fifths of the doctors in the entire district. Taken as a whole, the district is in very good condition.

LECTURE BUREAU.

One of the most important undertakings of the Council during the year was the inauguration of the Lecture Bureau, by which volunteers were received who would be willing to accept invitations to address county societies. Secretary Weis

was a committee of one to organize this Bureau and reported the following plan, which was unanimously adopted by the Council:

Your committee on formulating a scheme for the establishment of a Lecture Bureau begs leave to say that the following named physicians in Chicago, St. Louis and the various cities throughout the State have consented to the terms suggested, i. e., that each one stands ready to respond to a call to present a paper or a lecture to any of the county and district society meetings without expense to the local society. This list will be added to by volunteers and others.

In outlining the method I beg that you will understand that this is just tentative and may and perhaps must be changed by different conditions arising from time to time. In the first place I shall send a circular letter to every secretary giving the names of those who will respond to call, suggesting, however, that a selection should be made of the physician nearest to him.

Second, give him the choice of three or four names should it be that the first choice would find it impossible to come.

Third, every secretary in making application shall state the place, the time and probable attendance.

Fourth, at least three weeks' notice must be given.

Fifth, there shall be a standing notice published in the JOURNAL in relation to the Lecture Bureau.

Sixth, there shall be an implied pledge on the part of the secretary of the local society to forward the minutes of each meeting to the Editor for publication.

Seventh, this work I feel positive can be successfully carried out by me and I pledge my most earnest endeavors to make it a success.

(Signed)

E. W. WEIS, Committee.

VOUCHERS.

The business of the State Society having grown to such considerable proportions, it was deemed necessary to adopt some more complete method of accounting for the funds of the society; consequently, the Council had adopted a system of double voucher and check in order that every amount spent from the society treasury shall be properly verified and approved for payment. This plan was put into working January 1, 1910.

DIRECTORY.

During the year, in accordance with the by-laws of the society, a complete list of the physicians of the State and of the membership of the county societies and state society has been published by the Council and a copy sent to each member. This directory was published at a cost of 20 cents per member, including the mailing and postage, and many members have expressed their appreciation of this corrected list of the physicians of the state.

MEDICO-LEGAL COMMITTEE.

At the annual meeting of the Council, held in January, Chairman Moyer of the Medico-Legal Committee, reported the present conditions of the work of that committee. We hope that each member of the society will take especial pains to hear his annual report this year, as there are many things in the work of this committee which all should better understand.

STATE BOARD OF HEALTH SUIT.

At the January meeting the following resolution was unanimously adopted by the Council:

Chairman Black also brought to the attention of the Council the fact that the Illinois State Board of Health and its members individually were being sued by the National Medical College of Chicago for the purpose of compelling recognition and it further being thought that the Illinois State Medical Society through and by its Council could be of some use to the defendants, it is moved by Harris and seconded by Pettit that this Council offer the State Board of Health any assistance within our power in the action brought by the National Medical College against the State Board of Health. Carried.

JOURNAL.

As you all know, THE JOURNAL has appeared each month during the year, but we are sorry to report that it has not always been as nearly on time as should have been. This has been due to several causes, but principally to the crowded conditions of the office of the *Journal of the American Medical Association*. The Association is erecting a new building, which will soon be completed, and it is hoped that with the added room they will be able to get THE JOURNAL out more promptly in the future. From various sources from which we have received information, we believe that THE JOURNAL has been satisfactory to the members. As will be shown by the detailed report of the Editor, you will see that a larger number of pages of reading matter have been printed than ever before. Dr. Kreider's report was published in the January number of THE JOURNAL.

We again call your attention to the fact that we would suggest for your serious consideration the converting of the ILLINOIS STATE MEDICAL JOURNAL into a weekly or semi-monthly publication. While the publication of THE JOURNAL is in the hands of the Council, we desire expression and instruction from the House of Delegates in all important matters.

JOURNAL ADVERTISING.

The approximate amount of current contracts for advertising in THE JOURNAL is \$5,000. Practically nothing has been lost on these contracts during the year and the few bills now due are practically all collectable.

FINANCES.

At the annual meeting of the Council, held in Springfield January 6, 1910, Treasurer Everett J. Brown presented his general report for the year 1909 with vouchers attached; also two certificates from the National Bank of Decatur certifying to the cash balance to the credit of the treasurer in said bank. The report, vouchers and certificates were referred to the Auditing Committee appointed by the chair consisting of Harris, Pettit and Newcomb. Said committee reported that the accounts were correct, which report, on motion of Percy and seconded by Weis, was approved. A summary of said report of Treasurer Brown is as follows:

SUMMARY, JAN. 1, 1909, TO JAN. 1, 1910.

Receipts.

Jan. 1, 1909—Balance in bank.....	\$ 6,058.69
Jan. 1, 1909—Advertisements.....	4,420.44
Jan. 1, 1909—Dr. Weis.....	7,232.84
Total	\$17,711.97

Disbursements.

Journal bills	\$ 5,273.65
Honorariums	1,000.00
Councilors expenses	331.22
Expense funds	129.95
Dr. E. W. Weis.....	335.86
Exchange Dr. Baxter	112.85
Printing and Stationery.....	113.50
Dr. Baxter, com. expense.....	1,841.10
Dr. G. N. Kreider.....	1,130.00
William Whitford	205.03
Organizers commissions	65.00
Dr. C. L. Taylor, leg. com.....	970.09
Dr. Harold C. Ernst.....	100.00
Major W. M. Ireland.....	500.00
June 7—In savings department.....	2,000.00
June 7—Bank certificate.....	2,000.00
Jan. 1, 1910—Bank balance.....	\$1,176.95
December Journal check not in.....	463.25
Our balance	713.70
Total	\$17,711.97

Treasurer Brown also submitted a report of the financial condition of the Medico-Legal Defense Committee as follows: (This was part of his general report).

JAN. 1, 1909 TO JAN. 1, 1910.

MEDICO-LEGAL DEFENSE COMMITTEE.

Receipts.

Jan. 1, 1909—Balance in bank.....	\$3,799.50
May, 1909—Dr. E. W. Weis.....	2,893.00
June, 1909—Dr. E. W. Weis.....	932.00
December, 1909—Dr. E. W. Weis.....	638.00
Total	\$8,262.50

Disbursements.

Jan. 11, 1909—Dr. Harold N. Moyer.....	\$1,500.00
Sept. 28, 1909—Dr. Harold N. Moyer.....	1,500.00
Dec. 15, 1909—Dr. Harold N. Moyer.....	1,500.00
June 9, 1909—In savings department.....	1,500.00
June 9, 1909—In bank certificate.....	2,000.00
Jan. 1, 1910—Bank balance.....	262.50
Total	\$8,262.50

Respectfully submitted by the Council of the Illinois State Medical Society,
CARL E. BLACK, Chairman.

Dr. John Q. Roane, Carlyle, gave notice of a proposed amendment to Article V of the Constitution.

On motion, the Society then adjourned until 8 a. m., Thursday.

MAY 19—SECOND SESSION.

The House of Delegates met at 8:40 a. m., and was called to order by the President.

The chairman of the Committee on Credentials made a supplementary report, after which Secretary Weis called the roll and 101 delegates responded.

A question arose as to whether a representative from the Shelby County Medical Society should have a seat in the House as a delegate.

Dr. Ralph Wheeler moved that the representative from the Shelby County Medical Society be seated, not as a precedent, but in this instance as a matter of fairness. Seconded.

Dr. W. O. Ensign moved to amend to include representatives of other counties. Seconded.

Dr. Wheeler—I will withdraw my motion under such conditions.

As Dr. Ensign did not insist on his amendment, the motion of Dr. Wheeler was put and carried.

Secretary Weis then read the minutes of the previous session, which were approved.

Dr. Ralph Wheeler—Under the Constitution, I believe the next order of business is the election of officers of this Society. There has just been read an amendment to the Constitution which is germane to the question of election, and with the unanimous consent of the House, I move that we proceed to the consideration of this one particular amendment which refers to the election of offices, the President and President-elect. Seconded and carried.

Dr. Wheeler—I now move, Mr. President, the adoption of the amendment as read, which, I understand, will be Section 3, Article XI. Seconded and carried.

Dr. M. L. Harris—It will be necessary to make two or three minor changes in the wording of some of the other sections to conform to this, and I move that these changes be made. Seconded.

Dr. Wheeler—I believe the adoption of the amendment to the Constitution would carry with it those necessary changes in the wording of other sections.

Dr. W. O. Ensign—The passage of the act carries nothing with it.

Dr. Harris—I wish to renew my motion that the necessary changes be made in the wording of other sections so as to make this change in the Constitution operative. Motion carried.

The election of officers being in order, Dr. Carl E. Black nominated for President Dr. L. H. A. Nickerson, of Quincy. Dr. William L. Noble nominated Dr. A. C. Cotton, of Chicago, on behalf of the Chicago delegation. The nomination of Dr. Nickerson was seconded by Dr. Rice on behalf of the Adams County Medical Society.

The President appointed as tellers Drs. Harvey, Wyatt, Smith and Weis.

There were 103 votes cast, of which Dr. Cotton received 53, and Dr. Nickerson 49.

Dr. J. W. Pettit moved that the extra vote be counted as cast, and if a majority is not effected by the additional vote, it be recorded; if it is, that it do not stand. Seconded and carried.

The President stated that, according to the motion just passed, Dr. Cotton is elected President.

Dr. Pettit—That being the case, I move, Mr. President, that the election of Dr. Cotton be made unanimous.

This motion was seconded by several and carried unanimously.

The next order was nominations for President-elect. Dr. Pettit nominated Dr. W. K. Newcomb, of Champaign. Dr. Noble seconded the nomination. On motion of Dr. Black, the Secretary was instructed to cast the ballot of the House for Dr. Newcomb as President-elect, which he did, and Dr. Newcomb was declared duly elected.

Drs. Arthur Dean Bevan, of Chicago, and J. W. Hamilton, of Mount Vernon, were nominated for First Vice-President.

While voting on First Vice-President, the question came up as to the acceptance of the vote, inasmuch as one man had voted who was not a member of the Council, with the final outcome that Dr. Pettit moved that if the irregularity of one vote did not affect the vote for President and the vote for First Vice-President which had been taken, that the ballot be accepted. This was seconded by several and carried. Result of balloting for First Vice-President showed 44 ballots cast for Arthur D. Bevan and 55 for J. W. Hamilton. Dr. J. W. Hamilton was declared elected by the chair.

Nominations for Second Vice-President: Dr. W. L. Noble nominated Dr. J. E. Stubbs, of Chicago, and Dr. Rice moved that the Secretary be instructed to cast the ballot of the Society for Dr. Stubbs. The motion was carried and the Secretary cast the vote for Dr. Stubbs, who was declared elected by the chair.

Dr. Stubbs nominated Dr. E. J. Brown for Treasurer, and Dr. Rice moved that the nominations be closed and that the Secretary be instructed to cast the ballot of the Society for E. J. Brown for Treasurer. Motion carried, and the Secretary cast the ballot for Dr. Brown for Treasurer, and he was declared elected by the chair.

Dr. R. Wheeler moved that the President be instructed to cast the ballot of the Society for Dr. E. W. Weis for Secretary. Motion seconded and carried. The President cast the ballot for Dr. Weis for Secretary and declared him elected.

Nominations for Councilor, Fourth District: Dr. C. W. Hall nominated Dr. J. F. Percy. Dr. Pettit moved that the nominations be closed and that the Secretary be instructed to cast the ballot in behalf of the Society for Dr. Percy. Motion carried.

The Secretary cast the ballot for Dr. Percy and the chair declared him elected.

Nominations for Councilor, Fifth District: Dr. E. Mammen nominated Dr. J. Whitefield Smith, which was seconded, and also made the motion that the Secretary be instructed to cast the ballot for Dr. Smith. Motion carried and Secretary cast the ballot for Dr. Smith, the chair declaring him elected.

Nominations for Councilor, Seventh District: Dr. Pettit nominated Dr. J. Q. Roane, and moved that the Secretary be instructed to cast the ballot for Dr. Roane, which was seconded and carried. Ballot was cast by the Secretary for Dr. J. Q. Roane and he was declared elected by the chair.

DELEGATES TO THE A. M. A.

The following were placed in nomination: Dr. W. L. Noble and Dr. E. M. Webster, of Chicago; Dr. W. F. Grinstead, of Cairo; Dr. J. E. Allaben, of Rockford; Dr. A. L. Brittin, of Athens; Dr. H. B. Favill, of Chicago; Dr. J. L. Wiggins, of East St. Louis; Dr. S. C. Glidden, of Danville; Dr. E. W. Weis, of Ottawa.

Motion was made here that the six above-nominated persons receiving the highest number of votes be declared elected, which was seconded and carried.

Ballot was taken for delegates to the A. M. A. with following results: Drs. Weis, Grinstead, Glidden, Allaben, Brittin and Wiggins were declared elected. Dr. Noble then moved that the above election be unanimous, which was seconded and carried.

ALTERNATES.

Dr. J. F. Percy here moved that we proceed to the election of the alternates for delegates to the A. M. A. convention, and the following were nominated: Dr. G. W. Green, Chicago; Dr. George F. Allen, Aurora; Dr. W. E. Shallenberger, Canton; Dr. George F. Butler, Wilmette; Dr. M. S. Marey, Peoria; Dr. Frederiek Tiee, Chicago; Dr. C. D. Pence, Chicago.

Dr. Pence asked that his name be withdrawn, which was done, and Dr. Smith moved that the Secretary be instructed to cast his ballot for

the first six, which was seconded and carried. The Secretary cast his ballot for Drs. Green, Allen, Shallenberger, Butler, Marey and Tice, who were declared elected by the chair.

COMMITTEE ON PUBLIC POLICY.

Nominations for Committee on Public Policy: Dr. A. M. Harvey, Chicago; Dr. F. P. Norbury, Kankakee; Dr. William L. Baum, Chicago, were nominated, and Dr. Noble moved that the Secretary be instructed to cast the ballot for these three men, which was seconded and carried. The Secretary cast the ballot for Drs. Harvey, Norbury and Baum, and the chair declared them elected.

COMMITTEE ON MEDICAL LEGISLATION.

Dr. C. E. Black moved that the old committee, consisting of Drs. Taylor, Marey and Whalen be elected and that the Secretary be instructed to cast the ballot for these men. Motion seconded and carried. The Secretary cast the ballot for Drs. Taylor, Marey and Whalen, and the chair declared them elected.

COMMITTEE ON MEDICAL EDUCATION.

Dr. Pettit moved that the Secretary be instructed to cast the ballot for Dr. E. Mammen of Bloomington for the vacancy on the Committee on Medical Education. Motion seconded and carried. The Secretary cast the ballot for Dr. Mammen, and the chair declared him elected.

Dr. J. W. McDonald, of Aurora, in behalf of the physicians of Aurora and surrounding territory, extended a cordial invitation to the Society to hold its next annual session at Aurora. Dr. Nelson of Sangamon County also made a few remarks relative to the Society coming to Springfield next time. Aurora was named as the next meeting place unanimously.

Dr. C. E. Black moved that the per capita tax remain the same as last year, \$2.50, which was seconded. The motion was adopted.

Dr. Pettit moved that an appropriation of \$300 be made to defray the expenses of the President for the coming year, which was seconded and carried.

Dr. William L. Noble moved that the Secretary be instructed to have a new copy of the Constitution and By-Laws printed, embodying all the amendments and by-laws up to date. Seconded and carried.

REPORT OF THE MEDICOLEGAL COMMITTEE.

The report of the Medicolegal Committee was read by Dr. H. N. Moyer. On motion of Dr. Noble, seconded by Dr. Pettit, the report of the Medicolegal Committee was accepted and a vote of thanks extended to Dr. Moyer for his excellent services as head of this committee. Dr. Moyer thanked the Society for their words of appreciation, and made a few remarks on the report of the committee and also as to the future make-up of the committee.

RECEIPTS.

MAY 19, 1909, TO MAY 19, 1910.

Balance, May 19, 1909.....	\$ 713.49
Sept. 29, 1909, from Dr. E. J. Brown, treasurer.....	1,500.00
Dec. 1, 1909, from Calhoun Lyford & Sheean, refund appearance fee, Smith v. Dean.....	5.00
Dec. 14, 1909, from Maryland Casualty Co., refund in Garner v. Burkhardt	170.75
Dec. 16, 1909, from Dr. E. J. Brown, treasurer.....	1,500.00
April 25, 1910, from Dr. E. J. Brown, treasurer.....	500.00
	<hr/> 4,389.24

DISBURSEMENTS.

MAY 19, 1909 TO MAY 19, 1910.

General counsel	\$1,175.20
Attorney's fees	1,883.30
Stenographer	240.00
Exchange on checks.....	2.20
Postage	13.40
Stationery and printing.....	4.15
Books, "Taylor Law".....	12.00
Expense expert witnesses.....	170.75
Court reporters, stenographer, etc.....	376.13
Expense taking deposition.....	62.50
	<hr/> 3,939.63
Balance	\$449.61
	H. M. MOYER, Treasurer.

REPORT OF COMMITTEE ON MEDICAL LEGISLATION

The report of the Committee on Medical Legislation by the chairman, L. C. Taylor, was given verbally. He dwelt with considerable length on the work done by this committee in the legislature and lack of assistance received by the members of the auxiliary committee. After some discussion on the same, the report on motion was accepted.

Dr. E. Mammen moved the adoption of the following: That we favor the passage of Senate Bill 6049, introduced by Senator Robert E. Owen in the United States Senate, providing for the establishment of a National Department of Health, with a Secretary in the Cabinet of the President; and further, that the Secretary be instructed to inform our senators and representatives in Congress of this action by letter. Carried.

REPORT OF THE COMMITTEE ON MEDICAL EDUCATION

The report of the Committee on Medical Education was now taken up, and after considerable discussion by Drs. Egan, Bevan and Norbury, it was moved by Dr. Pettit that the report be accepted and placed on file. This motion was amended to lay on the table, which amendment was lost. The original motion was now put and carried.

REPORT OF THE COMMITTEE ON MEDICAL EDUCATION.

Your committee beg leave to report that since the appointment of a Committee on Medical Education at the Springfield meeting of the society in 1906, the subject of medical education in Illinois has not grown of less interest to the profession and people of the state. This subject gains added interest and importance because there are thirteen medical schools in Illinois, to say nothing of the large number of institutions, in addition, which are also teaching medicine in varying degrees.

Your committee, in 1907, inspected most of the medical schools in the city of Chicago. It will simplify matters for your committee, if it is stated that as a result of this investigation, we are in a position heartily to endorse the report of Dr. Arthur D. Bevan, chairman of the Committee on Medical Education of the American Medical Association, which he gave to the Council on Medical Education held in Chicago, February 28, 1910. The thanks of this society, as well as of every other state medical society in this country are due Dr. Bevan for the labor he has performed in order to give the country a clear statement of the conditions of medical education as they exist to-day. Our thanks are also due the Carnegie Foundation for the Advancement of Teaching for its unprejudiced work along the same general lines of the committee of which Dr. Bevan is chairman. It is to be regretted that the substance of this report is not known to every practitioner of medicine in the state of Illinois. Your committee would like to add some further information derived from their own experience as investigators of this subject, but as it would serve only to emphasize conditions which are already known to be deplorable, it has been decided to pass on to some of the more practical things. It is necessary for us to do this in order to prevent the further overcrowding of the profession with undertrained men; and at the same time protect the unsuspecting would-be doctor from the injury done him by making it easy to enter a profession of which the public is demanding more and more in the way of high grade service.

Your committee is convinced that it would be an improvement to have a separate board of examiners. This much-to-be-desired body, however, can do only a part of its legitimate work, if the physicians of this state do not interest themselves in such a way that they can explain to their representatives the absolute necessity of their refraining from giving special powers to medical sects whose educational standards are far below those required of graduates in medicine. This is unfair, not only to medical practitioners of good repute, but it is a great wrong committed against the sick, who have no means of knowing the qualifications of those who would care for them when ill.

Another wrong inflicted upon the sick by this kind of legislation is the failure to prevent the medical or religious sects from using the name "physician" and "doctor." It would seem to your committee that the most rational and reasonable manner of dealing with this evil would be by the establishment of a single licensing board, as has been done in many of the states, with full power to deal with and determine the qualifications of every individual in the state who professes to heal the sick, no matter under what name or authority he wants to do it. This would give but one way of entering into the practice of medicine in the state, and the plan is earnestly proposed for your consideration and commendation. Any sane man, whether he be a politician or even an ignorant layman, will readily understand that the successful management of disease must be based on the ability to make a correct diagnosis. In order to do this, he should have, indeed, must have training in the fundamental branches of a correct medical education. To have a lower educational standard for the osteopaths, by way of illustration, is unfair to the sick, to say nothing stronger; and, as well, is a mean kind of political, to say nothing of educational discrimination. In our own state there are but little preliminary educational requirements for those who practice under the "drugless healers" clause of our medical practice act.

As already stated, there are thirteen medical schools doing business in Illinois and charters have been granted for two additional schools this year. In the entire country, there are four medical night schools. Three of these are in our own state. It would seem to your committee that some legal check could and should be placed on the indiscriminate licensing of new medical schools. It is within the bounds of legal possibility—at least it so seems to your committee—for the legislature to make a standard of requirements in the way of financial assets, together with other necessary equipment, for successfully teaching medicine, before a charter is granted to those who may want it.

It is said that there is one legally qualified physician in Illinois to every 587 inhabitants. This, as can be readily seen, is far from accurate when the thousands of medical practitioners who are not physicians, within our understanding of the term, are taken into account. When, with this, we witness the narrow margin by which some of these sects fail to get all the rights and privileges of practicing physicians from the legislature, the unfairness of present methods becomes impressive. Conditions such as are mentioned above stand as a permanent menace to the legally qualified physicians now practicing in this state. There is overproduction of physicians who are graduates of schools that can by no stretch of the imagination claim proper facilities for teaching medicine. It is folly for your committee to recommend that the standard of medical colleges be raised, without at the same time demanding that their ability to finance the added requirements be also increased.

The day has gone by when a medical college should be run for profit. The great majority of the medical schools in this state are for profit only. This phase of the subject has made possible the fact that our country has almost as many medical schools as all the rest of the world put together. This, again, will account for our low standards of medical education which disgrace us before scientific men of every country. This again reacts upon the human sufferer, permitting of his maltreatment when sick in a way that is unworthy of our best possibilities.

This report would not be complete if it did not tell, in this connection, that there are six osteopathic and other "drugless healer" schools in the state besides the cheap schools already referred to, and that neither our State Society nor any other agency in the state has done, or is doing anything to discourage their existence.

This is our report. Your committee decided that the report would serve its greatest purpose if we told you, as briefly as we could, conditions as they actually exist in Illinois. The economic problems before the profession of Illinois are not visionary or slight. The profession is overcrowded not only with regulars, but with irregulars. The latter are being multiplied at a rate never before experienced by the profession, and practically nothing is being done, either in or out of the profession, to stop it. What is your pleasure in the matter?

Respectfully submitted,

FRANK P. NORBURY,
EDWIN W. RYERSON,
J. F. PERCY,

Committee.

Dr Pettit moved the adoption of the following resolution:

Resolved, That the Illinois State Medical Society heartily endorses the work that the Council on Medical Education of the A. M. A. is doing to elevate the standard of Medical Education in the United States. Seconded.

Dr. W. L. Noble here stated that because of lack of time to refer said resolutions to the Committee on Resolutions for consideration and report, he moved to rescind the action creating the Committee on Resolutions. The same was seconded and carried. The action now recurring on the resolution, it was unanimously carried. President Wiggins called to the chair First Vice-President C. U. Collins.

Dr. G. Frank Lydston offered the following resolution:

Whereas, The Illinois State Medical Society is a constituent body of the American Medical Association, and therefore vitally interested in the prosperity and success of that body, and

Whereas, the present organization being radically defective and fundamentally illegal, and

Whereas, the methods of election and government of the Association now in operation being unfair, inequitable and undemocratic, and

Whereas, the Illinois State Medical Society should stand for true democracy in spirit and in letter in the medical organizations of the country; therefore, be it

Resolved, That the Illinois State Medical Society makes the following recommendations to the House of Delegates of the American Medical Association:

1. That the offices of Secretary, Editor and General Manager be separated.
2. That the By-laws be so amended that no two executive or honorary offices shall be simultaneously held by any one person, provided that this shall not apply to officers of sections.
3. That the By-laws be so amended that bonds shall be specifically provided by the By-laws for all officers whose positions involve financial responsibility.
4. That the By-laws should be so amended as to make it mandatory upon the Secretary to enroll as a member any physician who shall have complied with the admission requirements provided by the By-laws.
5. That the arbitrary and illegal ruling that a member of the A. M. A. removing to a new locality shall within two years join a new constituent association or be dropped from membership in the A. M. A., should be abrogated.
6. That if the foregoing be not done, provision should be made for transfer cards for members of the A. M. A. changing locations, which shall make the acceptance of such members of the A. M. A. as members of the constituent body in the new location a matter of regular form not open to question.
7. The number of Trustees should be increased and provision made for several additional Trustees in the locality in which the central office of the Association may be situated. Under present conditions too much labor and responsibility are thrown upon the shoulders of a single individual, and representation of the rank and file is too limited.
8. Provision should be made for the ballot in the A. M. A. Under present conditions the organization is illegal from top to bottom. About 53 per cent. of the vote is illegal—a serious matter in view of the vast business interests and large trust fund of the A. M. A.
9. That unless a separate ballot for members of the A. M. A. be provided for, membership in the state societies should automatically carry with it membership in the A. M. A.
10. That some method should be adopted by which the financial condition and business affairs of the Association shall hereafter be presented to the members in more detailed form than is the present custom, thus maintaining the confidence of the membership at large.
11. All proceedings of the Judicial Council bearing upon the rights of or disciplining members of the A. M. A., including the evidence and arguments upon both sides, should be published in full in the columns of *THE JOURNAL* of the A. M. A. In case a member is dropped from the rolls of the A. M. A. by the Secretary, the name of such member and the reason for the Secretary's action should be published in *THE JOURNAL*.
12. The personnel of the Committee on Pharmacy and Chemistry should comprise in equal proportions physicians in actual practice and pharmacists and chemists.
13. In cases in which drug manufacturers have been attacked in *THE JOURNAL* and their advertisements excluded, and the advertisements of said manufacturers are subsequently accepted for publication, a full explanation of such action, comprehending all the criticisms on which the exclusion of said advertisements was based, should be published in the columns of *THE JOURNAL*.
14. That no executive or honorary officer or employe of the A. M. A. should be eligible to a seat in the council of a district association, house of delegates of a state society, or the House of Delegates of the A. M. A., provided that this shall not apply to those who are officers of sections only.
15. That no affiliated body of any constituent body of the A. M. A. should be permitted to have other than scientific representation in said constituent body. Under present conditions multiple representation and multiple voting exist, these conditions alone making illegal, unfair and illogical the entire political superstructure of the A. M. A. and its constituent bodies, and endangering the stability and prestige of the organization.
16. Provision should be made in the By-laws for the Initiative and Referendum as safeguarding the interests of the membership at large.

17. That pending the acquirement of a National charter the Association should conform to the Corporation laws of the State of Illinois by holding its elections within the State. Under the present system, the Association is at any time liable to attack on the ground of illegality, this being prejudicial to its property interests.

Dr. Corwin moved to lay same on table, which motion was declared lost. Here a motion was made to adjourn *sine die*, and seconded by several. The motion was put to aye and nay vote, which the chair declared carried, and adjourned the House.

E. W. WEIS, Secretary.

REPORT OF SECRETARIES' CONFERENCE.

The Fourth Annual Secretaries' Conference was called to order in Fern Hall, Danville, May 17, 1910, at 3 p. m., by President Lovewell, a large number of counties being represented by their secretaries or presidents. After the reading and adoption of the minutes of the previous meeting, the president introduced Dr. W. O. Ensign of Rutland, who, as one of the original supporters of the movement, made a few timely remarks, after which the regular program as arranged was carried out to the entire satisfaction of all and great credit to the participants:

"Current Medical Literature, and How to Use It," Carl E. Black, Jacksonville. "The Secretary," E. W. Fiegenbaum, Edwardsville. "What the President Can Do to Make the County Society a Success," A. E. Bulson, Jr., editor of the *Journal of the Indiana Medical Society*. "The Secretary's Part in the Organization of the Medical Profession; Is It Worth While?" J. F. Percy, Galesburg.

A vote of thanks was given all those who so nobly helped in the program and especially to Dr. Bulson who came the greater distance. After the completion of this program the conference went into business session and Dr. Weir of Clark county moved that the president appoint a committee of three to withdraw and nominate the officers for the ensuing year.

Among the many reports of successful societies all over the state was that of Dr. H. D. Ryman of Marion county, who spoke of the successful methods of conducting their summer outing meeting, and Dr. Grindstead of Cairo spoke of the satisfactory condition in the southern tier of counties and the increasing interest and enthusiasm in their societies, and made mention of Dr. Rancy's lake as a beautiful spot for such meetings. Dr. Grifflits, of Sangamon county, moved that our next meeting be held at this lake. Motion carried, time to be set by the officers. The nominating committee then made the following report: For president, D. G. Smith, Elizabeth; for vice-president, H. N. Rafferty, Robinson; for secretary-treasurer, E. W. Fiegenbaum, Edwardsville. A vote of thanks was given to Dr. C. Hubart Lovewell for the very efficient work he has done for this conference ever since its organization.

D. G. SMITH, Secretary.

THE USE OF CURRENT MEDICAL LITERATURE.

CARL E. BLACK, A.M., M.D.

JACKSONVILLE, ILL.

Mr. President and Members of the Secretaries' Conference:—It certainly gives me great pleasure to be with you on the occasion of this, your third annual meeting. As you all probably fully realize, the secretary means more to a medical society than all other officers combined. I say this advisedly and with due

appreciation of the office of president: A good secretary can make a good society out of a poor one and an indifferent secretary can easily cripple a good society.

Your officers in asking me to speak to you were kind enough to select as the subject "The Use of Current Medical Literature," and I am sure that there is no subject which I would rather present. Next to the medical society in importance is the medical library. Another way of putting the same thought is to say that next to the personal intercourse of physicians and the discussion of our experiences, comes the use of our medical literature.

Medical libraries are of two kinds: First, the great collection of books, pamphlets and periodicals used by writers, teachers and others doing research work; and second, the small practical working library of the busy practitioner. This may be an individual library or a cooperative or society library.

In speaking of libraries, we naturally think first of collections of books, but on this occasion I shall limit my remarks to the current periodicals of the small library. In the aggregate, the small library far outweighs the great library in importance. Each physician must have at least a few books and journals. I think the profession is waking up to the practical importance of current medical literature, and it would be difficult in these days to find a physician who does not receive each month a few medical journals. I know a few doctors who do not take medical journals, but you can easily imagine the kind of doctors they are. They do not fall under the head of our discussion on such an occasion as this, but must be classed as the exceptions which prove the rule.

Every man who has snap enough to become secretary of a county medical society realizes the growing importance of his journal literature. He looks to his journals for the advances in medicine and depends upon their advice and instruction from week to week. Books and journals are the most important instruments in the armamentarium of any physician, either general practitioner or specialist.

The practical question which confronts all of us, and especially those who have become busy in the actual work of every-day practice, is to find the necessary time to keep abreast of the times and apply the progress contained in the current journals to the needs of every-day practice. How do the new things in etiology, pathology, diagnosis and treatment get before the members of the profession? Medical progress begins with the experiments, observations and deductions of individuals. These, with their practical suggestions, are usually first presented to some medical society. They next appear in the transactions of such society and in the medical journals. Here they are discussed by the medical profession at large, and if they are worthy they live and shortly find their way into medical books. He who depends on medical books will always be a little behind the one who depends on the current medical literature. He may be safer from trying unproved theories, but will miss the inspiration of progress and will be delayed in accepting many a new method of diagnosis or plan of treatment.

One of the most pressing questions is how to make the great mass of journal literature available for daily use. The man in active practice cannot read every article which he may need and articles which seem uninteresting and useless to-day may become a pressing need in a month or a year. Advances in medicine and surgery have been by leaps and bounds and necessitate increased and improved facilities in order to make them available. I am convinced that better results will be obtained by cooperative work in current medical literature. The acquisition by a county medical society of a library of its own is of great value and forms an element of cohesion which can hardly be overestimated. Almost every county medical society can have a medical library, providing the members are willing to adopt a cooperative plan of using it, and I wish to direct your attention for a few minutes to such a plan.

It is an anomalous situation, that medicine, one of the most progressive branches of knowledge, has no convenient classified and cumulative index to its current literature. The *Index Medicus* answers the needs of the research

library, but is too cumbersome for the busy practitioner and lacks the cumulative feature. It is necessarily six to twelve months behind, for which period the number or volume index of the journals must be used. If one wishes to consult the literature of a given subject, say ten years, it would be necessary to consult the 10 annual indexes and the 120 monthly numbers in order to secure the references desired. Such a plan is plainly impracticable for the busy practitioner.

Living in a city of about 20,000 inhabitants, I was dependent on my own library. My necessities in this regard were not different from those of hundreds of others and innumerable devices have been tried in order to keep in touch with the current medical literature which one has on his own shelves.

These considerations led me to undertake indexing such articles as I thought might be needed in future reference. Several plans were tried, until finally about twelve years ago, a copy of Dewey's decimal classification and relative index was obtained, which gave me an index and classification well adapted to needs of ready reference. I was subscribing for ten or twelve of the best journals, and for nearly ten years I made a card index to all the original articles and clinical notes according to the Dewey classification, as I found by experience that it was impossible to select those I would require. As my time became more occupied, it was necessary to employ some one to do this work, and for the last two or three years it was done entirely by a trained nurse, quite satisfactorily. As the index grew, I was able to assist others who would call for references on given subjects.

Finally, so many colleagues became interested that I proposed to give my card index, which had now accumulated about 75,000 references, if the society would employ a trained librarian and continue the work. It was decided to undertake to apply the plan for the whole profession of my community. Our local society had already, through the efforts of those interested in medical literature, accumulated 2,000 volumes, although most of them were old. Incidentally, it may be said that a medical library is one of the most potent forces for maintaining the permanent stability of a medical society. Our collection of books and journals was real, tangible property, to which we now proposed to give an earning value. Our medical library already had a home in the public library building, and the librarian of the public library gave us invaluable assistance in carrying on and improving the work. We also had the good will and support of the board of directors of the public library, of which I had been a member for a number of years.

Our society being in no position financially to undertake this work, we secured authority for members, who would subscribe a fund, to take charge of the improvement of the library. We had an attorney draw up a contract, explaining to him carefully that we wanted one on which we could base other contracts. The contract read as follows:

We, the undersigned members of the Morgan County (Illinois) Medical Society, in consideration of the improved facilities to accrue to each of us upon the completion of the work hereafter mentioned severally promise to pay to the librarian of said society, each month, for a period of 24 months from this date, the several amounts, by each of us set opposite our signatures below, for the purpose of having the library of said society properly catalogued, analyzed and built up; it being understood that he shall through the said librarian, within the limits of the by-laws of said society, exercise exclusive control of the methods of doing said work, and of expending the fund hereby created, such control to be directed by the vote of a majority of said subscribers.

In December, 1907, the necessary \$1,800, or \$900 per year, having been pledged, the new work was begun on Jan. 1, 1908. A graduate librarian was employed for a two-year period. About two months of study and instruction were required to give her sufficient knowledge of medicine to enable her to begin the actual work, and during the first year it was necessary to carefully review every subject classified. We indexed and catalogued our medical books. We subscribed for 20 medical journals and the original articles and clinical notes in each of these were indexed. A telephone service was installed and members were urged to seek the library for references on any or all medical subjects. The growth of interest in this work was very satisfactory.

The plan consists of making a card index, both by author and by subject, of all original articles and clinical notes. At least two cards, subject and author, are made for each article, and many articles require two or more subject cards in order that important matters contained in them may not be overlooked. As soon as a journal is received at the library it is immediately indexed and its subject card filed under the proper class number and its author card filed alphabetically. We find it much more satisfactory to file the subject cards by classes than to file them alphabetically.

We believe the library is for use and not simply a room for archives. The object of those subscribing the original fund was to make the library of benefit to the members of the profession in their daily work and thereby bring speedier, surer and more perfect relief to the sick and suffering. This is an age of rapid and radical advancement in medicine, and it has been the purpose of this society to make the library aid each and every member to keep abreast of the times. We have tried to measure the success of the library by the practical use which is made of it from week to week. We believe that a library, a book or periodical worn out by use is one which has completely served the object for which it existed. It is hardly necessary to say that we had little or no difficulty in securing the necessary funds to carry on the library and the indexing for the fourth year which is now in progress.

The library subscribes for 30 of the leading periodicals, as follows:

<i>Illinois Medical Journal.</i>	<i>Surgery, Gynecology and Obstetrics.</i>
<i>Journal of the American Medical Association.</i>	<i>Military Surgeon.</i>
<i>New York Medical Record.</i>	<i>Archives of Pediatrics.</i>
<i>New York Medical Journal.</i>	<i>American Journal of Insanity.</i>
<i>Boston Medical and Surgical Journal.</i>	<i>Journal of Nervous and Mental Diseases.</i>
<i>London Lancet.</i>	<i>Brain.</i>
<i>British Medical Journal.</i>	<i>Archives of Ophthalmology.</i>
<i>Edinburgh Medical Journal.</i>	<i>Annals of Ophthalmology.</i>
<i>American Journal of Medical and Sciences.</i>	<i>Ophthalmic Record.</i>
<i>Archives of Internal Medicine.</i>	<i>American Record of Ophthalmology.</i>
<i>University of Penn. Bulletin.</i>	<i>Ophthalmology.</i>
<i>Johns Hopkins Bulletin.</i>	<i>Archives of Otology.</i>
<i>Quarterly Journal of Medicine.</i>	<i>Annals of Otology.</i>
<i>Therapeutic Gazette.</i>	<i>Journal of Laryngology.</i>
<i>Annals of Surgery.</i>	<i>Laryngoscope.</i>

In connection with this matter, I wish to speak of a new element which has come into almost every community and which may be used to the great advantage of the doctor. I refer to the modern librarian. Since Mr. Carnegie started this wave of public library building all over the world, there has grown up a new and exceedingly interesting and active profession, namely, that of librarian. Almost every city of any size has a public library in charge of one of the members of this profession. For the most part they are young women, well educated and well trained and anxious to make their library and themselves useful to the community, and I have yet to find a modern librarian who was not only willing, but glad to cooperate with the physicians in establishing and maintaining a medical library in the public library building. I think you should all organize your physicians to take advantage of this opportunity to establish at least a library of current medical literature. If you have no books, you can easily subscribe for twenty or thirty of the best journals, have them in this central location in charge of the public librarian and if possible, have an index to the original articles and clinical notes for ready reference. This index can be placed in the hands of the public librarian, as it will be little trouble for her to look up references for any physician. The first thought of the members of the average library board is that it is no part of the business of the public librarian to be looking up references for doctors, but they must readily admit that their librarian puts in a large part of her time looking up references for clergyman, for teachers, for students, for club women, and in fact, almost every other class of the community, and not only does the librarian look up references for these people, and it is eminently proper that she should do so, but the city furnishes the books and journals from which the references are taken. I will readily admit

that in the state of finances of the average public library, it would be impossible for them to furnish medical books and journals, but if the medical society furnishes the journals and the index, it is certainly asking little of the public librarian to give them a place and to look up references sought. In fact, this is far less than the library is doing for other citizens.

As indicated early in my remarks, there is nothing a medical society can do which will give it so substantial and firm an existence as to establish a medical library where physicians can be supplied with lists of references and where we can have ready access to the latest on those subjects in which we are interested.

THE SECRETARY.

E. W. FIEGENBAUM, M.D., EDWARDSVILLE, ILL.

In looking for a definition of this word, we find that it means, one who keeps accounts, a trusted officer, and one who attends to correspondence. This seems to cover pretty well the clerical end of our office, and has been presented to you so often, and by abler men than your speaker, that it seems there is very little left to say. However, there are a few points that have been of great help to me, that will be taken up here, in the hope that it will be of some service to others. It goes without saying, that accounts should be kept accurately, and to do this properly, some system must be adopted, to be carried on in our work year after year. In my work I have a large sheet, containing the names of all the doctors in the county, whether members or non-members, arranged along the margin. The balance of the sheet is ruled off into little squares arranged in columns, containing the credit for the year. At the top of these columns appears the date of the year. One glance at this sheet shows who are members and who are not, for the squares opposite the non-member's name are blank. It also shows who have paid each year and who are delinquents, as the square, for the year that was not paid for, is blank. It also comes in handy when the state secretary or councilor of the district calls for a list of members and non-members, and in one hour after such a request comes to my desk, the entire list, as called for, can be mailed to him.

I venture to say that collections are and always will be the hardest part of our work, and here again we must have a system. In my office we have small printed slips reminding the doctor that the dues for the current year are now due and payable. It also calls attention to the fact that the annual payment includes his subscription to THE MEDICAL JOURNAL and also entitles him to the services of the medicolegal committee, for the ensuing year. This slip is mailed to every member of our society, on the first day of January of each year, and our men are so used to it, that they expect it and wait until it comes. On the first day of February this same slip is mailed to every one who has not paid his dues during the month. This is repeated on the first of each succeeding month, throughout the year, until every last one of them has paid. Besides this the item of "Payment of Dues" appears on the program of each of our society meetings. No one, as far as I know, has taken offence at this procedure; it is simply a business proposition, the annual dues must be paid or the delinquent member will be reported as such.

In no department of our work is system more important than in the matter of correspondence. It should be the rule in every secretary's office to answer every letter on the day it is received, particularly so, if that letter comes from a member enclosing a check for his dues. Ninety-five per cent. of dues paid in our county comes in the form of a check, and it has been the practice of the secretary of our society to surprise the corresponding member by having a receipt for dues sent, on the member's desk, the very next morning. If a letter comes from a member desiring information which you may not be able to give, write and tell him so, but tell him at the same time, that you will obtain the information he desires and forward to him as soon as possible. And then do it. There is nothing that so raises the secretary in the estimation of his constituents as the habit of

attending to correspondence in a prompt and business-like way. But all this costs time and effort. That is true and the answer is, that the secretary who is not in love with his job, thinks he is doing too much work for his salary, and is not willing to give freely of his time, energy and perhaps money, ought to resign. The sooner a medical society that is afflicted with a lazy secretary, elects someone else in his place, the better it is for the society.

There is another point that might as well come in right here. Dealing with so many men, we naturally come in contact, either in person or by letter, with various dispositions, and some of them may prove very disagreeable. Here we must be "as wise as a serpent and as harmless as a dove." Let the provocation be ever so great, we ought not to allow anything to irritate us into giving anything but the most generous, the most courteous treatment to our correspondents. In spite of being over-worked and tired, in spite of a bad liver, we must not allow ourselves to show one bit of temper or else we might find ourselves in the condition of the young man at the telephone when he did not get the number he called for as quickly as he desired. "See here, central," he shouted, "I'll report you." "You don't know who I am," was the calm reply. "Well, I'll find out, and that blamed quick, too," he replied. "I know you, though," came in a soft sweet tone over the wire. "You're in the big office furniture building—I've seen your picture." "You have," exclaimed the young man delightedly, and he mentally kicked himself for having been so rude to so sweet a girl, "Where did you see it? Was it in the Furniture Journal?" "No," came the laughing reply, "it was on a lobster can."

But there is another and better definition of the word secretary, and that is, one who is intrusted with and keeps secrets, a confidant. And here is where the faithful secretary, the real secretary, finds his greatest field of usefulness. In an editorial in the April number of THE ILLINOIS MEDICAL JOURNAL can be found this sentence, "The life of the county society depends upon the secretary." Be this as it may, this I know, that the real secretary comes nearer to the great heart of the profession than anyone. If he then exercises tact and good judgment, he not only becomes a benefit to the individual, but to the membership at large. His fine Italian hand can smooth out many difficulties, apply soothing remedies to the outraged feelings of some offended brother and bring harmony out of what threatened to be serious discord. The real secretary is the faithful repository of many tales of woe, of many complaints of unkind treatment that one member has received, or thinks he has received, at the hands of some other member. Now is the time when he can pour oil on the troubled waters and, by a tactful ingenuity, prove to the lacerated one that the offending brother is not such a bad fellow after all and had no intention of injuring anyone. This he can best do by bringing as many members to the regular meetings of the society as possible where the whole profession of the county has a better opportunity of becoming acquainted with each other than anywhere else. It is only by association that traits of character are discovered which were but little suspected. It is only by the mingling of congenial spirits that we find that these spirits are congenial. But how are you going to find that out if you don't mingle? Attendance on the frequent meetings of our county societies reveals to our members the lofty aim and nobleness of purpose of our associates, the wealth of knowledge and skill possessed by the individual, and we return to our work with a loftier opinion of the members of our profession and, inspired by this feeling, we are more able to do better work ourselves and, to the same degree, have been benefited by the personal contact. Perhaps at one of these meetings our old animosity against our neighbor has received a staggering blow, owing to a sudden revelation of the depth and solidity of the man's character, revealed that day by his participation in the discussions, and in a short time this animosity may be turned to respect, and finally ripen into admiration and friendship, a consummation devoutly to be wished. And that brings me to the next point.

The secretary of a county society is a failure if he is not an organizer, if he fails to bring into the fold every eligible physician in his county. In season and out of season, by personal touch, by correspondence, by the public press and other

agencies, he should labor to extend the membership to the uttermost confines of his jurisdiction. One of the other agencies is the president of the county society. The real secretary will strive to transform his president from the handsome, steady, wise figurehead that he usually is into a real live wire, a working force for the great betterment of the organization. Down our way we have asked our president to present an annual address at some designated meeting during his term of office. This paper and its discussion is made the sole order of the day, for that meeting, and the poor man will sweat blood, but that he will get up a paper that is strictly up to date and will call forth the very latest that is to be found on that subject. It is my experience as a secretary that you will have a large attendance if you will give your members something that will repay them for loss of time and probably practice, while in attendance on the meeting. You cannot expect members to come from all over the county, at a cost of time and money, and then offer them nothing except some platitudes gathered from the text-books. But give them something that is of value, that will help them in their practice during many lonely days, and they will be eager and anxious to come, and will always be there if circumstances will permit.

But we have gone one step farther. By resolutions our president is requested, during his term of office, to make an annual visit to every city, town or hamlet, in the county that contains three or more physicians, for the purpose of mutual acquaintance and to extend our organization. On these visits he is expected to meet as many doctors as possible, talk over medical matters, induce them to come to our meetings, and to affiliate themselves with our society. Just how much this will add cannot now be known, but I imagine it will not be in vain. At a recent meeting we had one-half of our entire membership (35) in attendance.

The value of complete organization in a county cannot be over estimated. We in our county had the experience both ways, and know what we are talking about. When I entered the profession, thirty-four years ago, we had a fair working society, but for various reasons it died, stone dead, and for 12 to 14 years was buried 40 fathoms deep. That was a reign of terror, when dog ate dog, neighbor eat neighbor, and everybody "flocked by himself." No one had a good word for his associate, but did him all the harm he could, thereby trying to gain an advantage for himself. Things went on from bad to worse, until there was only one good doctor in our whole county and that was myself. And every other doctor in the county thought so too—about himself. Finally, only about seven years ago, a few good doctors (No, I was not one of them, although I very soon came in) assembled and had a resurrection day. The old skeleton was dragged out and set upon a throne, and the faithful gathered around to see what could be done. Some flesh was gathered on the old bones, some arteries, veins and nerves were judiciously inserted, and finally the breath of life was breathed into the old body, and, lo, it became a thing of action. It began to grow and thrive and is now in good working order. The spirit of brotherhood is abroad in the land, and the gentle dove of peace and harmony is settling down among us. More members are being added to our society all the time, until to-day we have a body of 75 to 80 of as good doctors as the sun ever shone on, loyal and consistent members of our society, and I am their secretary. May be you think I am not proud to be their secretary. The spirit of respect for each other, and of harmony throughout the profession was never so good as now. Several incidents have come up within the past two or three years to test this feeling and the unanimous desire to stand by each other when in trouble, exhibited during these tests, augurs well for the future and speaks volumes in favor of organization in our profession. It is not to be understood that we have reached the goal, that we have no faults to eradicate, but we are trying to eradicate them as fast as we can. We are daily trying to learn the lesson, that

If you see a tall fellow ahead of a crowd,
A leader of men marching fearless and proud,
And you know of a tale whose mere telling aloud,
Would cause his proud head to in anguish be bowed,
It's a pretty good plan to forget it.

If you know of a skeleton hidden away
 In a closet, and guarded, and kept from the day
 In the dark; and whose showing, whose sudden display,
 Would cause grief and sorrow and lifelong dismay,
 It's a pretty good plan to forget it.

WHAT THE PRESIDENT CAN DO TO MAKE THE COUNTY MEDICAL SOCIETY A SUCCESS.

ALBERT E. BULSON, JR., M.D., FORT WAYNE, IND.

Mr. President, Ladies and Gentlemen: I am agreeably surprised to see such a large attendance at this meeting of Illinois county medical society officers, and judging from the number present it would seem to me that every county medical society in Illinois is represented. When I think of the small attendance at the last meeting of Indiana county medical society officers I feel a little ashamed to think that Indiana, which has boasted of its well organized medical profession, should be so far behind in efforts such as this audience represents. I shall certainly carry home with me some new ideas concerning this great organization movement in the medical profession, which I have assisted in carrying on in Indiana.

If I had been asked to offer some suggestions as to how the secretary can aid in building up his county medical society, I probably could say much more than I can on the subject assigned me, for I have always considered that the life of a society depends upon its secretary. But I confess that I think the president can very materially assist the secretary, and he owes it to himself and the society to do so.

The average doctor who is elected president of a medical society seems to imagine that all he has to do is to be a fairly regular attendant at meetings, look wise when presiding, and exhibit a working knowledge of parliamentary law. He oftentimes is a man who has been given the office because of his age, or because he is a shrewd politician, and not because he deserves it. All of which reminds me that we do not always select the best men for office, and those who hold office and appreciate its duties and responsibilities should set an example for others.

A society should bestow the office of president upon a deserving member. It is not enough that the man should be an old member, but he should be a respected member and one who has been faithful in his attendance and interest. The old saying, "to the victors belong the spoils," could be paraphrased into "to the active and faithful belong the offices." Seldom if ever does it pay to give the presidency to an apathetic member or one whose ethical position is questionable, in the belief that by honoring such a man he will be stimulated to turn over a new leaf. Usually he considers the honor thrust upon him as a premium for his conduct, and he straightway proceeds to be even worse than he was before. Every physician should be made to feel that he must earn the presidency of his medical society. He must do something and be somebody.

Having been elected president of a society the physician assumes a responsibility which applies to the general public, the medical profession of the community, and the society. As the recognized head of the medical profession in the community he should aid in maintaining the dignity and standing of the profession. He should interest himself in the public health and sanitation of his community, and he should encourage the public to have a wholesome respect for the aims and purposes of the medical profession.

The conservation of public health is a part of the work of the medical profession, and it can be carried on more effectually with a united and harmonious medical profession at whose head there is an energetic, broadminded and reputable man. The public is much more likely to assist in endeavors to promote public health if the recognized leader of the medical profession is one who, because of his attainments and character, commands respect and confidence.

In every community there is more or less opposition on the part of the public to wise and necessary legislation pertaining to the suppression of disease by quarantine and suitable disinfection, vaccination, sanitation, proper disposal of sewage, and food inspection. Just at the present time there is much opposition in some localities to the tuberculin test of dairy cows, the inspection of milk and the proper care of all dairy and other farm products. It is the manifest duty of physicians as competent medical advisers and as protectors of the public health to take an emphatic stand in favor of these life-saving measures, and there is no better way to promote this conservation movement than by giving it public approval through united action on the part of our county medical societies. The president is manifestly the one from whom the initiative must come if the matter is overlooked by others. He should by his recommendations and influence create in his society a strong sentiment for and active support of the work of our state, county and municipal boards of health. Furthermore, the president should be one of the first to publicly approve measures for the reduction of the mortality and morbidity rate, and he should set an example in proper efforts to educate the public in matters of importance in conserving public health. By so doing he is adding to the success of his county medical society of which he as its recognized leader stands morally pledged to give aid and support to everything which adds to the health and happiness of our people. In endeavors to build up the medical society and create scientific as well as social interest and enthusiasm the president should take the lead. The secretary may be ever so competent yet he needs the help and influence of the president.

One of the most important things necessary for the success of a medical society is harmony among its members, for without harmony there is sure to be friction, a division of influence upon vital issues, and a lack of interest in the scientific work. If the president holds the confidence and respect of his fellow physicians he can do much to unite them into a harmonious body having a common purpose and working unselfishly and unitedly for the aims and purposes of progressive medical men.

One of the first things a president should do is to meet personally each individual member of his society and place himself in a friendly attitude toward every one. If he has aroused the ill feelings of any member it should be his desire and aim to overcome such ill feeling if it can be accomplished without sacrifice of dignity and self-respect. No man can accomplish the best results if he has the open or secret enmity of his fellow practitioners, for they will oppose for the sake of being on the opposite side, no matter how worthy the measure.

The president should be a mediator or peacemaker between various contending individuals or factions. In every community there is more or less professional jealousy existing among members of the medical profession, and petty antagonisms, oftentimes made public, prevent the harmonious and united effort for the betterment of the profession that otherwise would be possible. What is more deplorable and injurious to the medical profession in lowering medical standing in the eyes of the public than an open controversy over the management of a case, the value of medical services rendered, or the discussion of personalities and reflection upon the ability or integrity of a member of the medical profession. The president, through his influence and advice, should aim to prevent such unpleasant occurrences, and he should call upon the medical society to aid him in maintaining proper dignity among medical men and in stimulating a healthy respect on the part of the public for the ethics of the medical profession.

The friendship and even the advice of the young men should be sought, for in the young men lies the future of the medical profession, and the greatest success of our medical societies. Too often our young men are overlooked, though their energy and enthusiasm, to say nothing of their attainments which to-day outweigh the attainments of many of our older men, should command our respect and urge us to enlist their services in all our efforts.

The president, through his personal influence, can do much to stimulate interest in the scientific work of the county medical society. The secretary may have done his duty in letting the members and others know what is being done or is

scheduled to be done, yet these efforts to interest the profession will be more effectual if reinforced by the personal appeals of the president who should consider it his privilege as well as his duty to aid in encouraging attendance at meetings and interest in the work of the organization of which he is the recognized leader. The physician who is not a member of the society but who is eligible oftentimes needs only the personal invitation and perhaps the company of the president to the first meeting in order to make him sufficiently interested to want to become a member and a regular attendant. Likewise the inactive member who is a member in name only may oftentimes be induced to become a more frequent attendant if he is importuned in a cordial way by the president. Sometimes the discussion of some topic pertaining to the business side of the practice of medicine may be the one thing which will attract visitors or encourage inactive members to be present. Oftentimes it stimulates the attendance to have the president say to a physician who is not a member or who is an inactive member, "we are going to discuss such and such questions at our next meeting and I personally want you to be there and give us the benefit of your experience and advice." It may be the flattery which makes this plan work successfully, but more often it is the personal appeal with a definite purpose behind it, to say nothing of the interest in the subject under discussion which has been aroused by the invitation so urgently tendered.

But the society should always have something to offer, and upon the president and secretary falls the duty of providing the program. A plan of work for the year should be laid out and this plan of work should include the discussion of a variety of scientific subjects, with demonstrations and exhibitions of patients, specimens, and illustrations whenever possible, and occasionally the consideration of questions which pertain to the purely business side of the practice of medicine. An effort should be made to enlist in this work not only all of the active members of the society, but to secure cooperation of the inactive members as well. Not every man will think that he can write a paper, or perhaps he will think that he has no time for such work, and yet that man may be induced to present an interesting case report, exhibit an interesting specimen, open the discussion of a paper, or act upon some important committee and thus contribute to the sum total which makes for the success of the society. The secretary may have failed to secure the services of such a member and the president succeeds where the secretary fails.

In this day when the cost of living is greater than ever before, the discussion of medical fees and other topics concerning the business side of the practice of medicine is appropriate. Here the president can use his influence in shaping professional action which shall be dignified and in keeping with the conditions to be met. In other words the president stands in the position of a wise counselor and he should so conduct himself as to merit the title.

Next to having a plan of work is the importance of carrying out the program as arranged. Nothing will kill a medical society quicker than to fail to have programs, fail to meet regularly, and fail to meet at a regular hour. The man who makes an effort and perhaps considerable sacrifice of time in order to attend a medical society should be made to feel that he has been repaid. He should not be disappointed, and he should learn to know that a program will not only be followed but that it will be carried out at the appointed time and with sufficient interest of those who take part in it. One of the best ways to stimulate interest is to get men to work. No society can succeed unless it has good workers and good programs which are invariably carried out. If a naturally apathetic member finds that his attendance at an occasional meeting of his medical society is not profitable and that no life is exhibited he at once loses what little interest he possessed and instead of being susceptible to influences which might make him an active and valuable member he slips into the class that is hopeless. Even the most faithful and ardent supporter of a medical society soon loses interest and enthusiasm when he finds that his medical society is irregular in habits and offers but little for the time and inconvenience he is put to in attending.

Sometimes men are not interested because they have nothing to do, and if willing to do something have been waiting for an invitation to become active. It is

always a good plan to give every member of a county medical society some responsibility and make him feel that his friends are expecting him to do his duty to the position assigned. The president usually has the appointive power, and a wise selection of men who are to open discussions of papers or act upon important committees may be the means of opening up a field of activity and interest which otherwise would not receive attention. Some men have to be coaxed and others have to be driven, and it requires no little judgment to decide as to the best plan to pursue in getting the most out of the members of a medical society, but the president, through the diplomacy and tact he should possess, is in a position to accomplish more than anyone else in securing service from the members.

Every medical society in order to live and thrive must give its members something of value, and what is offered should be substantial, practical and given at regular intervals. The president of the society should take an active interest in planning the work for the society and in seeing that it is properly carried on. He should feel that the success of the society is in his hands and that he should turn the society over to his successor with the knowledge that through his efforts the scientific, social and professional interests of its members have been advanced. He should by his regular attendance, his interest in the work of the society, his unfailing courtesy to members, and his professional demeanor both in and out of the society, prove that the society and all that it represents is the better for having entrusted its fate to him.

THE SECRETARY'S PART IN THE ORGANIZATION OF THE MEDICAL PROFESSION? IS IT WORTH WHILE?

J. F. PERCY, M.D., GALESBURG, ILL.

I am assuming, in this address, that the question asked, "Is It Worth While?" applies to the secretary's position as a factor in the development of the county society. And I want to put in plain English the question that is implied, viz., is it worth while for the secretary to do this work? To do this work for whom? The county society or for himself?

There need be, there can be, no debate as to the value of this work to the county society, if the secretary does it as it should be done. But I want to discuss it from another, and probably more important, standpoint: the value of the secretary's work to the secretary. The value of the county society to its individual members admits of no debate. The county society is the only forum that the average among us have. Too many of us never appreciate what we could get out of the county society, in the way of measuring ourselves with its best members, if we would but attempt to take the measurements. Men sometimes make a mental measurement of those met in these meetings, and hastily assume that they are longer and broader than themselves, and make no more measurements, and are careful thereafter not to look into the subject again until their own unaided progress in the future forces upon them the knowledge that they might have done better had they measured and strengthened their weak places earlier in life.

But as for the secretary, there are two kinds of him. There is the one who is the born secretary; the other is the one who is a made secretary. Lucky is the county society who has a born secretary, and has judgment enough to keep him. But the born secretary is a rare fellow. Most of the good secretaries are made. It is this latter class who can with most concern ask the question: "Is it worth while?" In answering this question in the affirmative, let us give some of the reasons. What makes men? Let us answer truthfully, *contact with men*. Contact with men *gives* insight into human character; *gives* knowledge of the motives that lead men to do what they do do; it *gives* strength to think, thinking leads to inquiry, and this again leads to investigation, which is the scientific synonym for inquiry. A man *alone* in a city or a village retrogrades. In so much as ye would that I should be alone, oh, my brother, in so much shall I be of no account. Just in the degree that we have no contact with our fellows, just in that degree do we fail. There are more professional hermits in medicine than in any other

profession. Some men enjoy this, but more not only do not enjoy it, but wonder, as the days go by, why they are in the same old rut that they were in years before.

What will give a physician a better chance to progress than to really fill the duties of secretary? Where can you better learn of the strength and the weakness of your fellows? Where can you better measure yourself and discover your own weakness, and have an opportunity of mentioning your own strength to yourself? Take this opportunity, and you will lead yourself. Once get into the habit of leading yourself, and you will lead others. Unless we enter our brain in the race with other brains, we will never need to use them except in the very ordinary affairs of our profession. Before we can make any progress, we have got to do well the things that have already been done by others. But after this, if we stick to it, we will begin to do things in our own way that others have not done. This is the acme of progress. Every human soul was evidently born to do some one thing, at least, well. How many of us never find out that we can go beyond the ordinary routine of the average? The average man is one who never starts. One of the first things that I remember of Will Mayo was his statement to me when he got home after graduating from Ann Arbor: "I am going to try and be one of the great surgeons of the world." Will Mayo went to bed with that idea every night, and he got up with it in the morning. His statement, had he failed, would be merely ridiculous egotism of youth; but he started with a great purpose, and he drew apart from the average as a consequence.

In contrast to this, a few months ago I had at my table a splendid appearing country doctor, sixty-four years of age. In the course of our conversation on men and things, he remarked that he had recently returned from a visit to the Mayos, and he said seriously: "I have more brains than Will Mayo." "Will Mayo has only an average brain, but the difference between my brain and Will Mayo's brain is that Will Mayo made his brain work, and I did not." And he added, sadly: "It is too late; brain effort is a matter of growth, and I could not now win." I know of no greater tragedy that could come into the life of a human being than to awaken in the sunset of life with a brain that has gone far enough to appreciate what success in life means, and yet *know* that that brain had made no serious effort to reach a worth while goal, and have to sit down and in bitterness say, "too late."

Another phase of the secretary's work is not sufficiently considered. It is not enough to progress as to one's self, but it is necessary, as a part of it, to make others progress also. In the ancient book it is said: "For he that hath, to him shall be given: and he that hath not from him shall be taken away even that which he hath." On another occasion I paraphrased that enigma of the Christ's, and made it read: "To him that giveth shall be given; to him that giveth not, shall be taken away even that which he hath to give." Not only secretaries of county societies, but men in all walks of life, fail, because they do not give what they could easily give to push the whole mass of us upward. I see sitting in this audience the man who, more than any other, made me whatever I may be. Dr. Wm. O. Ensign of Rutland interested E. J. Brown and myself in the work of this state society, and I am glad that we three are in this meeting to-day, that I may pay at least my tribute of love and respect to a man whom I venerate as I do my own father. Brown and I may not have come up to the ideals that he had for us in the beginning, but I know that we have done our best. The opportunity for the secretary to do this same kind of work is beyond computation. He gives, in this way, what cannot be figured in money, and he receives not money, but honor and respect and a long vista of years of memory which glorify and light the path of human endeavor.

I want to say a word right here about the secretary's wife. As a rule, the physician's wife is no dreamer. Most of them have very little use for medical societies, especially when their husband is the secretary. The wife who says to her husband, when he returns from the meeting and announces that he has been elected secretary, "What good is it to you?" is a bad wife. The secretary's wife who tells him in a manner that cannot be misunderstood, when he returns from a

medical meeting, of the calls he has missed and the baby cases that went to his competitor, is a very bad wife. The doctor's wife, when her husband is making up the program for the next county meeting, who tells him that if he would stay home more he could pay his grocery bills much easier, is an awfully bad wife; and I want to put myself on record, regardless of the possible consequences, as saying that such a wife is a bad adviser, and that I hope no secretary will ever listen to her when she talks like that.

There are economic problems before the profession that every secretary of a county society should know and acquaint his members with. Men are making calls in England to-day for a penny. Men of ability, as consultants, are going miles over there for a shilling. In our own country, one of the great life insurance companies is bunching its to-be-insured and offering them to the lowest bidder. In some places they are getting a complete medical examination for fifty cents. This same company is establishing sanitariums for the treatment of their sick insured, and getting a lot of free advertising because of their high-minded benevolence. Who is paying for this but the physicians who give four dollars and a half back to the company when they make examinations for them for fifty cents? Those of you who read the papers will have noticed that ex-President Roosevelt, while in Europe, was greatly interested in old age pensions, that he was investigating this subject in order to work for governmental pensions in this country. Do you realize that the necessary examinations for the classification of these pensions must be made by the physicians, and that if we are not careful, these will be farmed out to the lowest bidder? The secretary should know these things, and pass them on to his members.

The secretary may not get much credit for knowing this and a lot of other things necessary for the best work of the physicians in his country, *but you grow* with their knowing. You may be misunderstood and your motives misconstrued, but if you work for the bunch, and really do it with an eye single only to their interests, it is bound finally to be recognized, and you will not regret doing it. Indeed, when you have finally won recognition in this way, the chances are that you will be given credit beyond your just deserts, as is true in the case of many of us. But it is probably the working out of the law of compensation, and makes life a little easier for us because recognition, after all, is the American Beauty in the garden of our endeavor.

WANTED.

One copy of the Transactions of the Illinois State Medical Society for 1894. One dollar and a half will be paid for same if sent prepaid to the editor's office.

ILLINOIS MEDICAL JOURNAL

THE OFFICIAL ORGAN OF THE ILLINOIS STATE MEDICAL SOCIETY

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JULY, 1910.

THE ST. LOUIS MEETING OF THE A. M. A.

One of the most successful meetings of the A. M. A. we have ever attended was held at St. Louis last month. The state of Missouri and its metropolis, St. Louis, have in recent years passed from the "poor old" condition in which they had been placed so many years, and have ranged themselves with the most progressive of states and cities in the Union.

St. Louis, for so many decades a house of notorious wrangling and contention, among its medical men, has had a complete change of countenance and occupies its legitimate position as the fourth city of the Union in a medical, as well as a commercial way.

The St. Louis Medical Society is fortunate in having for its president Dr. Henry Schwartz. He was able to combine all his forces into a harmonious working body, which put its shoulder to the wheel and compelled success.

Wealthy citizens of St. Louis have in the last few months come forward with a magnificent endowment for one of the medical schools, and thereby set an example which we hope will not be long wasted on our own Chicago.

The report of the Carnegie Foundation on the medical schools of the United States came out just before the opening of the meeting, and in St. Louis, as elsewhere, created an immense sensation. The St. Louis dailies took up this matter in a most sensible way and gave the cause of legitimate scientific medicine the heartiest acclaim. The governor of the state, in his address of welcome, paid the profession of medicine the highest possible tribute, and won encomiums for his complimentary expressions and sound common sense.

Our G. F. Lydston appeared early in the lime light in the columns of the St. Louis papers, announcing what he had done and what he proposed to accomplish. Like Cassabianca, he stood upon the burning deck whence all but him had fled and when the deck burned up and Cassabianca was drowned there was not even a hole left in the water to mark his disappearance.

Dr. Simmons was unanimously reelected secretary, and the insurgents given such a set back that it seems that they can "surge" no more outside of their own towns. The Section meetings were well placed, and well attended, and while the entertainments tendered by the St. Louis people for various reasons, including the weather, were not as successful as might have been, they were all-sufficient. Dr. J. B. Murphy, the greatest surgical teacher of the world, was made president-elect and Chicago again comes to the front.

Illinois members of the profession attended in very large numbers, probably 800 of the 4,000 being from this state. Secretary Weis, of our society, was elected president of the secretary's convention, at its meeting on Monday night, a deserving compliment to an old and faithful official. The next meeting will be held at Los Angeles, Cal., during the summer of 1911.

DEATH OF DR. ROBERT KOCH.

Dr. Koch, the distinguished sanitarian and bacteriologist, passed from earth the 27th of May, 1910. The death of such a distinguished member of the medical profession calls for more than passing notice. Dr. Koch had risen from obscurity to fill a larger place in the medical world than any other man at the time of his death. He narrowly escaped being a citizen of America, one of his brothers being a business man in St. Louis for many years, and we believe he contemplated at one time residence in this country, but never carried out the intention, although he visited his brother several times during his life. The history of his scientific researches is so well known to the average medical man that but few words will be necessary at this time.

At Wollstein, a small village, he began his investigations, using field mice for this purpose, and in these uninspiring surroundings so thor-

oughly did he work out the principles of bacteriology that when he announced his results little, if anything, could be added to the rules which he laid down for the study of the causes of disease. His ability was recognized and he was very soon called to Berlin, where he was made director of the department created for him by the Imperial Government. From this time forward he was constantly busy investigating diseases; both at home and in remote parts of the world, where he was sent by the enlightened German Government to use his great power of observation in discovering the causes of the various epidemic diseases afflicting mankind. So great was his intuition that he seldom failed to discover the cause of the disease which he was investigating. We owe our knowledge of tuberculosis, cholera and the sleeping sickness to Koch, and we are indebted to his method of research for our knowledge of diphtheria, typhoid, malaria, and bubonic plague, and in fact all of the diseases the germs of which have been discovered in the past twenty-five years. The *German Medical Weekly*, of Berlin, gives an account of the last illness of Dr. Koch, an abstract of which we present herewith, together with a copy of the telegram sent to his widow by the Emperor. The report is signed Professors Brieger and Kraus.

Dr. Robert Koch had an intermittent pulse for several years and began to suffer with symptoms of stenocardia in March, 1910. In mounting stairs he was obliged to stop because of pains in region of the heart and difficult breathing. Pyramidon seemed to have a good effect on some of his symptoms and his energy combatted the attacks which rapidly became longer and more severe. Within a short time of his death he labored daily from 9 to 2 in the laboratories of the Institute for Infectious Diseases as well as in the Virchow Hospital at Berlin. Koch had coughed for a number of years and at times there was expectoration in which bacilli were never found. Toward the end of the 90's he had severe left-sided pneumonia. During his last journeys in Africa, Japan and America he had experienced no especial difficulties. He was never a considerable smoker or a lover of stimulants. He saved his strength to marked degree during his journeys and in his scientific work. He stated that he had had one severe attack of cholera, and malaria several times. He frequently had had bowel trouble. During the night of April 9 Koch, without known cause, suffered an attack of heart weakness of the most severe kind; during the evening he had felt well and had taken his usual light dinner with his wife. He went to bed at 11 o'clock and slept his usual half hour. Later he was awakened with a feeling of complete prostration, accompanied by the most intense lack of breath, vomiting and sweating; at the same time he experienced severe pressing pains, which spread from the scrobiculus to the left shoulder. These pains and a severe feeling of oppression caused him unceasing pain. He remarked to himself and his friends a well marked râle in the lungs. In these conditions we found him sitting on the edge of the bed, pale as death, with ice-cold extremities, dyspnea, complete prostration, without ability to speak, expecting his end, but mentally entirely rational and composed; the pulse was thread like, extremely irregular and 80. An injection of morphia revived him for a period of 15 minutes. He slept until 9 a. m.; then woke with similar symptoms, especially the râles in the lungs, difficulty of breathing and heart weakness. Toward midday we both examined him and found his condition much better than in the night; the heart was found much enlarged in the left ventricle, universal edema of lungs with foamy sanguinolent sputum, very frequent and extremely irregular pulse, heart sounds muffled and soft. The arteries quite rigid, liver a little swollen, very slight abdominal anasarca. We decided that as a result of disease of the coronary artery a myomalacia cordis had taken place.

Next morning there was a loud murmur of pericardiac character, well marked hematuria with casts. The temperature was only slightly above normal one day. There was no pericardiac fluid at any time. Urinary conditions began to improve. The first treatment consisted of digitalis, morphia and strong coffee, and warm poultices to the feet and hands. Improvement was noticed which lasted for a week; all symptoms improved, although there was intermission of the pulse. Movement caused no difference in the heart but dyspnea. The pulse remained about 60; the blood pressure increased to 144; patient's condition improved at this time and he remained out of bed the whole day. After the 14th of May he went several times for a drive, received his friends and tried to read and do some laboratory work. He soon found that any unusual effort brought on a great deal of dyspnea. In the middle of May we found arterial blood pressure 110-160, and hypertrophy of the left heart determined by location of the apex and *x*-ray.

Koch related finally that he had an old tuberculosis. Roentgen photographs showed no evidence of tuberculosis. From this moment he felt better of his difficult breathing, because he did not fear tuberculosis. Koch was a quiet and obedient patient; he did everything that was ordered by the doctors, observed himself with the greatest interest, discussed with stoic calmness the developments in our investigations. He was pleased as a child with his increasing appetite for oat-meal, which again tasted good to him. When the conversation was on scientific matters he forgot at once all suffering, his eyes sparkled under his high forehead, his shortness of breath alone reminded him of his severe illness. He was glad to receive visits from his friends although he had frequently to suffer dyspnea and insomnia. The prognosis was bad from the first; the slight improvement which meant a life in an invalid chair, with short walks in the room, could not deceive us. We did not keep this from his friends and relatives, but he wished very much to go to Baden-Baden, and we were compelled to yield him this wish.

A man like Koch lives entirely or not at all. The journey was made without bad results and this was very encouraging to him. He was served with the greatest care by his wife, who for days did not remove her clothing.

He died in the afternoon of the 27th of May, in Baden-Baden, from a new attack of the heart weakness. His remains were cremated. The Emperor telegraphed the following to Madam Koch: "I extend to your Excellency my heartiest sympathy in the death of your husband, so highly honored by me. I deeply lament the loss of the greatest German physician of our time, and with the entire German nation, thankfully look back on the blessed work of his life."

THE CARNEGIE FOUNDATION FOR THE ADVANCEMENT OF TEACHING.

REPORT FOR ILLINOIS

The writer of the Report of the Carnegie Foundation for the advancement of teaching, an educational expert, declares that this country is supporting three or four times as many doctors as it requires, and that most of them have been trained in inferior schools. The medical schools, he asserts, are still producing two or three times as many doctors as can be assimilated and, in his judgment, four-fifths of the schools could be wiped out and the remaining fifth, if properly supported, could produce all the physicians needed in the country and bet-

ter trained ones. Out of 155 schools only about 30 were found to have the necessary laboratories which all claim to possess; fewer than 30 enjoy adequate hospital facilities.

Population, 5,717,229. Number of physicians, 9,744. Ratio 1 to 586. Number of medical schools, 14, plus 4 post-graduate schools. Chicago: Population, 2,282,927.

1. RUSH MEDICAL COLLEGE.—A divided school. Since 1900 the instruction of the first and second years has been given wholly at the University of Chicago, of which it is an integral part; the third and fourth years, given at the Cook County, the Presbyterian, and the Children's Memorial hospitals and in the laboratory buildings adjoining them, are merely affiliated with the university. Pedagogically, the two branches do not form an organic whole. Entrance requirement: Two years of college work, strictly enforced, though a considerable part of the entering class is conditioned in part of the scientific requirement. Attendance, 488.

Teaching staff: 89 professors and 141 of other grade; total, 230. The laboratory work is in charge of men devoting their entire time to teaching and research. Resources available for maintenance: The instruction provided by the university is paid for out of the university funds and costs annually, \$45,738; the clinical division, carried by student fees and contributions, costs \$36,714, a total cost of \$82,452. The total income in fees is \$60,485.

Laboratory facilities: The laboratory branches are most liberally provided for on the university grounds; the laboratories are most complete in number and equipment, each manned by a full staff, all the members of which are engaged in investigation as well as in teaching. There is considerable difference of opinion among those engaged in teaching the scientific subjects as to how far the presentation should be deliberately medical in aim. Clinical facilities: Clinical facilities are provided by the Presbyterian Hospital, the staff of which is the faculty of the Rush Medical School, by the Cook County Hospital, and by other connections. The Presbyterian Hospital is an important adjunct, though thus far it is not by any means a genuine teaching hospital. It contains about 150 beds available for instruction. The Cook County Hospital will be discussed in connection with the general state situation. It is sufficient to say here that its abundant material is in a high degree valuable, though serious limitations upon its use exist. Rush holds 21 staff appointments. Dispensary facilities are entirely adequate. Date of visit: April, 1909.

2. NORTHWESTERN UNIVERSITY MEDICAL DEPARTMENT.—Organized 1859, it has borne its present title since 1891. An integral part of the university. Entrance requirement: *One year of college work, hitherto loosely enforced.* Attendance, 522.

Teaching staff: 54 professors and 89 of other grade; 143 in all, ten of whom devote their entire time to the school. Resources available for maintenance: except for two professorships, endowed to the extent of \$89,076.

Laboratory facilities: The school has the necessary laboratories, well equipped for routine work; more could be done but that the full time teachers lack the necessary assistants. Clinical facilities: These are provided by Mercy Hospital, Wesley Hospital, the Cook County Hospital, and other institutions. The Wesley Hospital, the staff of which comes wholly from the faculty of this school, contains 80 free beds. It is, however, not primarily a teaching hospital, though it might apparently be recognized as such with much advantage both to itself and to the medical school. The Cook County Hospital will be discussed below; Northwestern holds 12 staff appointments there. In general, material is abundant in amount and variety; the defects of the situation arise from the lack of financial resources and pedagogical control. Dispensary requirements are amply met. Dates of visits: April, 1909; December, 1909.

3. COLLEGE OF PHYSICIANS AND SURGEONS.—Organized in 1882; since 1896 nominally the medical department of the University of Illinois, with which, however, only a contractual relation exists.

Entrance requirement: A high school education or its equivalent, the latter hitherto very loosely interpreted, though somewhat stricter action has been enforced this year. The policy of the institution has been to accept students who satisfied the Illinois law as administered by the present state board; the requirement has, therefore, been more or less nominal. Advanced standing has been accorded to students from decidedly inferior schools, some of them among the worst institutions in the country. These students were examined, only those who passed being accepted; but the fact that, with the teaching they have had, they can pass is conclusive as to the nature of the examination.

Attendance, 517, about 60 per cent. from Illinois. Teaching staff: 198, of whom 42 are professors; 156 other grade. Resources available for maintenance: The institution is practically dependent on its fees, amounting to \$80,155 (estimated), and has a large floating debt.

Laboratory facilities: The school has the following laboratories: physiology, well equipped; pharmacology and chemistry, mediocre; anatomy, pathology, and bacteriology, adequate. There are full-time professors of anatomy and physiology, without skilled assistants or helpers. Their work is limited to routine. The school has a large library. *Clinical facilities: For these the school relies on the Cook County Hospital, on the staff of which it holds 11 appointments, and on a number of other institutions to which its students are admitted under the usual limitations. Prominent among these is the so-called "University Hospital," which may be cited as a typical instance of the misleading character of catalogue representations. The title itself is a misnomer; for the hospital is a university hospital not in the sense that large teaching advantages exist for the benefit of the university, but only in the sense that to the existing opportunities, restricted as they are, students from other schools are not admitted at all. The catalogue states that "it contains one hundred beds, and its clinical advantages are used exclusively for the students of this college." Not, however, the "clinical advantages" of the "one hundred beds," for 52 of them are private. Its "clinical advan-*

tages" shrink on investigation to three weekly amphitheater clinics of slight pedagogic value and four ward clinics in obstetrics, each of the latter attended by some 12 to 14 students in a ward containing 13 beds. Supplementary connections give access to large surgical clinics. The dispensary service is in general adequate. Dates of visits: April, 1909; December, 1909.

4. CHICAGO COLLEGE OF MEDICINE AND SURGERY.—Organized 1901, and since 1902 the medical department of Valparaiso (Indiana) University; up to 1905 an eclectic institution.

Entrance requirement: A high school education or its equivalent, interpreted to include anything that the state board will accept.

Attendance: The school had an enrollment of 315 in 1907-8, and of 366 in 1908-9, the senior class of the former year numbering 95; the freshman 69. This disproportion is largely due to the fact that advanced standing has been indiscriminately granted to students who had previously attended low-grade institutions, some of them now defunct. Credit has been allowed to former students of even the worst of the Chicago night schools.

Teaching staff: The school has a faculty of 71, of whom 37 are professors. There are no full-time teachers, though some of the scientific branches are taught by full-time teachers of Valparaiso University, who come to the Chicago department on certain days weekly. Resources available for maintenance: Fees, amounting to \$43,430 (estimated).

Laboratory facilities: The equipment throughout is ordinary, the usual laboratories being provided. There are few teaching accessories. *Clinical facilities:* Clinical facilities are inadequate, being limited in the main to an adjoining hospital of 75 beds, of which one-fourth can be used for teaching, and to the Cook County Hospital, on the staff of which the school has two representatives. The dispensary has a fair attendance and is in some respects well organized. Date of visit: April, 1909.

5. BENNETT MEDICAL COLLEGE.—Organized 1868, and up to 1909 an eclectic school. A stock company, practically owned by the dean of the school: "There are enough others to legalize the thing!" *Entrance requirement:* Nominal compliance with the Illinois law on the subject. A pre-medical department—Jefferson Park Academy—recruited by solicitors, has been organized by way of feeding the medical school. A vigorous advertising and soliciting system is operated. Attendance, 181, about one-half from Illinois.

Teaching staff: 42, of whom 21 are professors. Resources available for maintenance: Fees, amounting to \$19,380 (estimated),

Laboratory facilities: The school building is in wretched condition. One badly kept room is devoted to anatomy; it contained a few cadavers as dry as leather; another in similar condition, is given to chemistry. There is slight provision for pathology and bacteriology; equipment for physiology is sufficient only for simple demonstrations. There are no teaching accessories worthy of mention. *Clinical facilities:* These comprise a pay hospital of 45 beds, in which it is claimed that 20 are made

available for teaching use by means of free medical (not hospital) services; and two places on the Cook County Hospital staff. The clinical facilities are utterly inadequate. There is a small dispensary.

The institution is frankly commercial. Its change of name (dropping "eclectic") is a business move. Date of visit: April, 1909.

6. AMERICAN MEDICAL MISSIONARY COLLEGE.—Organized 1895. This school gives the bulk of its instruction at Battle Creek, Mich., which see for complete account.

7. JENNER MEDICAL COLLEGE.—Organized 1892. A night school occupying three upper floors of a business house. An independent institution. *Entrance requirement: Nominal compliance with the state law. A one-year pre-medical class is operated by way of satisfying the law.* Attendance, 112.

Teaching staff: 37, of whom 28 are professors. Resources available for maintenance: Fees, amounting to \$12,880 (estimated).

Laboratory facilities: The equipment consists of a meager outfit for chemistry, a somewhat better equipment for physiology, though no animals were to be seen, and a slight outfit for pathology and bacteriology. Anatomy is taught by lectures "with the cadaver" from the beginning of the year until May 15, after which there is "dissecting until the close of the year." Clinical facilities: Clinical facilities are practically nil—one or two night clinics being all that the school claims to offer. The school once had access to Grace Hospital, a private institution of 30 beds; but it has recently been turned out for failure to pay for the privilege. The dispensary attendance varies from two to ten, for four nights weekly. No particular rooms for dispensary purposes are provided: "patients are taken right into the rooms where the classes are."

An out-and-out commercial enterprise. The instruction is plainly a quiz-compend drill aimed at the written examinations set by the state board of Illinois and of other states. The possibility of teaching medicine acceptably in a night school is discussed below (p. 216, note). Date of visit: April, 1909.

8. ILLINOIS MEDICAL COLLEGE.—Organized 1894. 9. RELIANCE MEDICAL COLLEGE.—Organized 1907.

These two schools are bracketed because they are only different aspects of one enterprise worked into two shifts, one body of students attending by day, the other by night. The plant is thus in "continuous performance." It is owned by its president, who is in the main assisted in the scientific branches by recent college graduates, to whom small sums are paid; in the clinical branches by young physicians who tender their services gratis in order to "work up their business." The day school is affiliated with Loyola University. Entrance requirement: Of the kind usual in Illinois commercial medical schools. A pre-medical class, running three hours each night, covers in a year the work of two high school years. A boy who is engaged all day in trade can thus "finish" two years' English, Latin and mathematics at night in a single session. It is probable that the pre-medical course will be lengthened to two such

years, "equivalent" to an entire high school course, according to the "Illinois idea." Attendance: Reliance Medical College, 83; Illinois Medical College, 69.

Teaching staff: The night medical school (Reliance) has a faculty of 44, 23 being professors; the day branch (Illinois Medical) has a faculty of 73, 38 being professors. Resources available for maintenance: Fees, amounting to \$9,945 (Reliance, estimated); \$9,175 (Illinois, estimated).

Laboratory facilities: The equipment conforms to legal stipulations: there is a library, the beginnings of a museum, an ordinary dissecting room, a small amount of apparatus for physiology, and fair laboratories, as things go, for chemistry, histology, pathology, and bacteriology. The laboratories are in good condition and are really used. Clinical facilities: Day students: Some eight or ten hours weekly for junior and senior classes in scattered hospitals; work almost wholly surgical; one to two hours daily in the dispensary in the college building. Students see no contagious diseases; obstetrical work is all out-patient. Night students: About six hours weekly at the Cook County Hospital, between 6:30 and 9:30 p. m., opportunities being limited to looking on at surgical work; dispensary, nightly. The night students see no children's diseases, no acute medical diseases at the bedside, no contagious diseases. Dates of visits: April, 1909; December, 1909.

10. NATIONAL MEDICAL UNIVERSITY.—A night school, organized in 1891 as "homeopathic," which word was subsequently dropped. Ostensibly the medical department of the "Chicago Night University," which claims departments of arts, law, dentistry, pharmacy, etc. The school appears to be owned by the "dean." Entrance requirement: Entrance is on the same basis as in other night schools; a "preparatory department" is also in operation. Attendance, 150. "Free transportation from Chicago to Vienna, by way of New York, London, Paris," etc., is offered to any graduate who has for "three years or more paid regular fees in cash."

Teaching staff: 36. Resources available for maintenance: Fees, amounting to \$22,500 (estimated).

Laboratory facilities: *The school occupies a badly lighted building containing nothing that can be dignified by the name of equipment. There has been no dissecting thus far (October to the middle of April), anatomy being didactically taught. Persistent inquiry for the "dissecting-room" was, however, finally rewarded by the sight of a dirty unused, and almost inaccessible room containing a putrid corpse, several of the members of which had been hacked off. There is a large room called the chemical laboratory, its equipment "locked up," the tables spotless. "About ten" oil-immersion microscopes are claimed—also "locked up in the storeroom." There is not even a pretense of anything else. Classes in session were all taking dictation. Clinical facilities: The top floor is the "hospital;" it contained two lonely patients. Access to a private hospital two miles distant is also claimed.*

Recently this school has been declared by the Illinois State Board of Health as "not in good standing." The same action was taken once

before, but was afterwards revoked; just why, it is impossible to find out; for the school was after the revocation just exactly what it was at the time of its suspension; and it is the same to-day. Date of visit: April, 1909.

11. COLLEGE OF MEDICINE AND SURGERY.—Physio Medical.—Organized 1885. An independent school.

Entrance requirement: Such as satisfies the present interpretation of the law. A diligent search in the office desk and safe failed to discover any credentials of students now in the school. Attendance, 33.

Teaching staff: 42, of whom 33 are professors. Resources available for maintenance: The school has no resources but fees, amounting to \$2,935 (estimated).

Laboratory facilities: The equipment is very meager. Clinical facilities amount to little; there were in the hospital last year 167 patients, over one-half surgical; there is an annual attendance of 250 in the dispensary. Date of visit: April, 1909.

12. HERING MEDICAL COLLEGE. HOMEOPATHIC.—Organized 1892. This school teaches homeopathic doctrine in its original purity. Entrance requirement: "High school or equivalent." Attendance, 32.

Teaching staff: 44, of whom 30 are professors. Resources available for maintenance: Fees, amounting to \$3,360 (estimated).

Laboratory facilities: The equipment is very meager. Clinical facilities: These are very limited. Students are not admitted to the adjoining hospital. There is a small dispensary. Date of visit: April, 1909.

13. HAHNEMANN MEDICAL COLLEGE.—Homeopathic. Organized 1859. An independent institution. Entrance requirement: "High school, or equivalent." Attendance, 130.

Teaching staff: 84, of whom 38 are professors. Resources available for maintenance: Fees, amounting to \$14,300 (estimated).

Laboratory facilities: The school occupies a building wretchedly dirty, excepting only the single laboratory, fairly equipped, devoted to pathology and bacteriology. The equipment covers in a meager way also anatomy, physiology, histology, chemistry. Clinical facilities: In the adjoining hospital there are accommodations in the wards for 60 beds, but there are no ward clinics. The superintendent is a layman who "does not believe in admitting students to the wards." There is no regular way for them to see common acute diseases, "as only amphitheater clinics are held." Hospital interns do all the obstetrical work; students "look on." The school also holds two appointments on the surgical side in the Cook County Hospital. Date of visit: April, 1909.

14. LITTLEJOHN COLLEGE OF OSTEOPATHY.—An undisguised commercial enterprise. Entrance requirement: Nominal. Attendance, 75.

Teaching staff: 43. Resources available for maintenance: Fees, and income from patients.

Laboratory facilities: Practically none. At the time of the visit, some rebuilding was in progress, in consequence of which even such

laboratories as are claimed were, except that of elementary chemistry, entirely out of commission and likely to remain so for months: but "teaching goes on all the same." Class-rooms were practically bare, except for chairs and a table. Clinical facilities: The Littlejohn Hospital—a pay institution of 20 beds, mostly surgical—which can be of little use. It is claimed too, that "medicine and surgery are taught in the school," and color is lent to the statement by the presence on the faculty of physicians teaching materia medica, etc. Date of visit: December, 1909.

15. THE POSTGRADUATE MEDICAL SCHOOL AND HOSPITAL.—A stock company. Teaching staff: 98. Resources available for maintenance: Fees.

Laboratory facilities: A good working clinical laboratory. Clinical facilities: The school offers clinical instruction in its own hospital, containing a small number of beds, and in other Chicago institutions. The instruction is attended by physicians for periods varying from a few weeks to a year. Date of visit: April, 1909.

16. CHICAGO POLICLINIC.—A postgraduate institution organized as a stock company. Offers special courses to graduated physicians. Attendance: Perhaps 30 at any given time; a total of 350 in the course of a year.

Teaching staff: 92, 30 being professors, 62 of other grade. Resources available for maintenance: Fees.

Laboratory facilities: A small clinical laboratory, the instruction in technique being given by a first-year student in one of the night schools; in the absence of the instructor he also conducts classes. Clinical facilities: The main reliance is the Polyclinic Hospital of 80 beds, two-thirds of them surgical. Date of visit: December, 1909.

17. CHICAGO EYE, EAR, NOSE AND THROAT COLLEGE.—A stock company offering courses in certain specialties. Attendance: 20 on average; average period of residence, two months; a few remain six to twelve months.

Teaching staff: 22. Resources available for maintenance: Fees. Facilities: A fairly equipped dispensary with a daily attendance of 15 to 20 new patients; a hospital with 10 ward beds, empty at time of visit, "but full a week ago." The work is all immediately practical; there are no facilities for fundamental or intensive instruction or effort. Date of visit: December, 1909.

18. ILLINOIS POSTGRADUATE SCHOOL.—A stock company. Entrance requirement: The M.D. degree. Attendance: 6 to 8 at any given time.

Teaching staff: 36, of whom 26 are professors, 10 of other grade. Resources available for maintenance: Fees. Laboratory facilities: Practically none. Clinical facilities: The school offers courses at the West Side Hospital, a private institution of 80 beds occupied mostly by surgical cases. There is a large dispensary. Date of visit: December, 1909.

GENERAL CONSIDERATIONS.

The city of Chicago is in respect to medical education the plague spot of the country. The state law is fairly adequate, for it empowers the board of health to establish a standard of preliminary education, laboratory equipment, and clinical facilities, thus fixing the conditions which shall entitle a school to be considered reputable. In pursuance of these powers, the board has made the four-year high school or its equivalent the basis, and has enumerated the essentials of the medical course, including, among other things, clinical instruction through two annual terms.

With the indubitable connivance of the state board, these provisions are, and have long been, flagrantly violated. Of the fourteen undergraduate medical schools above described, the majority exist, and prepare candidates for the Illinois state board examinations in unmistakable contravention of the law and the state board rules. These schools are as follows: 1. Chicago College of Medicine and Surgery (Valparaiso University). 2. Hahnemann Medical College. 3. Hering Medical College. 4. Illinois Medical College. 5. Bennett Medical College. 6. Physio-Medical College of Medicine and Surgery. 7. Jenner Medical College. 8. National Medical University. 9. Reliance Medical College. 10. Littlejohn College of Osteopathy. Of these, only one, the National Medical University, has been deprived of "good standing" by the state board. Without exception, a large proportion of their attendance offers for admission an "equivalent," which is not an equivalent in any sense whatsoever; it is nevertheless accepted without question by the state board, though the statute explicitly states that it can exact an equivalent by "satisfactory" examination. In the case of the night schools, for instance, one or two years' requirements are satisfied by "coaching" one night a week in each of the several subjects; one evening is devoted to Latin, the next to English, the next to mathematics. There is absolutely no guarantee that the candidate accepted on the equivalent basis has had an education even remotely resembling the high school training which the Illinois law intends as the minimum upon which it will recognize a candidate for the physician's license.

If the state board should—as in duty bound—publicly brand these schools as "not in good standing" by reason of their failure to require a suitable preliminary education of their students, their graduates would be immediately excluded from practice in Illinois; adjoining states would rapidly follow suit, with the result that the schools would shortly be exterminated. Fortunately, the case against them does not rest alone on the question of entrance requirements: for not a single one of the schools mentioned furnishes clinical opportunities in proper abundance, and some of them even fail to provide the stipulated training in other branches, e. g., anatomy. An efficient and intelligent administration of the law would thus reduce in short order the medical schools of Chicago to three—Rush, Northwestern, and the College of Physicians and Surgeons. In the matter of entrance requirements, Rush alone is secure. The College of Physicians and Surgeons rests on the high school or equiv-

alent basis; if a scholastic equivalent, such as would be acceptable to the academic department of the state university is insisted on, the registration will be seriously diminished. Northwestern is in similar plight: it requires now a high school education or equivalent, followed by a year of college work, which it does not get. If its standard were enforced, its present attendance would be considerably reduced. At both Northwestern and the College of Physicians and Surgeons the inequality and incapacity of the present student body are frankly conceded. "The facilities are better than the students," said the professor at the former; "the admission machinery doesn't stop the unfit," said a professor at the latter. That both these schools will be driven by internal and external forces to a higher level, actually enforced, is inevitable. When that happens their attendance will materially shrink; and as higher standards will check the invasion of medical schools by drifting waverers, and will tend to keep the number of doctors in more nearly normal relation to the needs of the population, it is not likely that either school will again attain its former size. This consideration is rendered additionally important because it portends a marked reduction in income through fees, upon which both schools still depend.

In the matter of teaching facilities, the three schools under discussion satisfy the law; but they satisfy the aspirations of their faculties only in varying degrees. The scientific work of the University of Chicago, relied on by Rush, is excellent; the provision made by Northwestern and the College of Physicians and Surgeons is distinctly inferior to it. Assuming that Northwestern will rise to an actual one or two year college basis, it must provide correspondingly increased facilities both for the higher grade students and for the more productive teaching body which these students will demand. There are, for instance, several full-time instructors, but they are without an adequate force of assistants. The needs of the College of Physicians and Surgeons are much greater. Its laboratory facilities and equipment are inadequate even for the present student body; and it has hardly begun the development of a full-time teaching staff in the scientific branches. Both these schools face an era of increased investment in plant and of considerably augmented running expenses, coinciding with a period of reduced income from tuition fees.

On the clinical side, Rush and Northwestern do not differ substantially; the College of Physicians and Surgeons is somewhat inferior. Both Rush and Northwestern have an exclusive staff connection with certain hospitals. Their hospital situation is, therefore, as things go in this country, tolerable. They command a sufficient number of cases, subject, however, to two defects that will be more acutely felt as clearer ideals become dominant in medical education: 1. They are not in position freely to import clinical teachers; nor, 2. can they in general discontinue a professorial appointment without to the same extent abridging their clinical resources; none of them completely controls, even in a single hospital, the conditions under which clinical instruction is given.

The Cook County Hospital is common to all three. Its relations to the medical schools have been subject to variation and disturbance. The

institution is conducted by a lay warden, who, though a politician, is now friendly to the schools. At present, the staff is selected by civil service examination every six years. Rush now holds twice as many appointments as either of the other two schools, a discrepancy that may be either emphasized, obliterated, or reversed at the next examination. The main clinical facilities of the several schools are thus precarious. They are also limited: a recent unpleasantness—due, according to one version, to a quarrel between certain doctors and some nurses who objected to the careless way in which the doctors replaced the bed sheets—has resulted in the exclusion of students from the wards. Patients are exhibited in the rooms. The incident involves serious limitations upon teaching methods, and illustrates the uncertainty which attaches to mere privileges and courtesies. Cases cannot be assigned for intensive study to particular students; hospital residents make the records and do the clinical laboratory work. The undergraduate student can see conditions in abundance; he cannot at close range observe processes in development. The Cook County Hospital is, therefore, from a strictly educational point of view, not a laboratory in which beginners can be trained in a thorough technique. It is, however, immensely valuable as a storehouse of illustrative material for students who have elsewhere a satisfactory preliminary discipline.

None of the supplementary hospitals used by the schools cures these defects. They are too small; their purpose is only secondarily educational: friction is liable to arise over efforts to retain patients for teaching purposes; the students remain more or less outsiders.

The modernization of medical education in Chicago requires, then, that two of the three schools in question should greatly strengthen their laboratory instruction, and that all three should strengthen their clinical instruction. The number of students to be provided for is a factor in determining a definite line of procedure. Rush has on its two-year college basis 488 students; Northwestern had in its first-year class, on a very loosely enforced one-year basis, 66; the inevitable two-year standard will greatly reduce this number. Should the College of Physicians and Surgeons go to the two-year college standard—an inevitable development, if it lives—it would suffer similarly. It seems fair to estimate, then, that the actual number of medical students in Chicago on a two-year college basis will not be too large to be cared for in a single school adequately equipped with laboratories and hospital. As medical education on the proper basis cannot be attempted outside a university, and as none of the three universities now teaching medicine in Chicago is likely to abandon the field to the others, it is suggested in the interest of efficiency and economy that 1, each of the three universities continue to provide—like the University of Chicago—the instruction of the first two years; 2, all three universities combine to form a clinical department under joint management, the first step towards which would be a concerted effort to procure a proper hospital for the use of third and fourth year men. The sum necessary to procure three such hospitals is so large that it is highly improbable that as separate institutions the schools can

acquire separate and adequate clinical departments. Inasmuch as there is no demand for graduates exceeding the capacity of one clinical school, it would be sheer extravagance to equip three on the basis proposed. The Cook County and other hospitals would, on the suggested arrangement, play the part for which they are exactly suited in furnishing illustrative material for advanced students, whose discipline has been elsewhere looked to, and in making possible the development of instruction for graduates in all the specialties, a form of opportunity for which, just for lack of differentiation and organization, our physicians are still forced to go abroad. A great opportunity is thus fairly within the grasp of Chicago: the conditions to its realization are *honesty and intelligence on the part of the state authorities*, and cooperation between the three great universities of the state. The execution of this plan might set the country at large to thinking on the wisdom and necessity of coordinating our educational enterprises. Everywhere, thus far, our higher education has worn a competitive aspect. Some good has been thus accomplished; but now that local or numerical competition can be replaced by scientific and scholarly competition, to which the entire country and, indeed, the civilized world are parties, we begin to realize the waste and demoralization due to institutional competition. It is difficult to see how the state of Illinois, which in the interest of public health ought to be a factor in medical education, can make an effective contribution thereto except by cooperation with the Chicago schools. Should the state seek to develop its own school in Chicago with the inevitable low tuition fees, great friction must result. Much preferable to conflict would be the withdrawal of the state from participation in clinical instruction altogether, content in that event with a half-school at Urbana, strengthened, be it hoped, by state laboratories of public health. The entire situation presents a rare opportunity for educational statesmanship.

THE LONDON HOSPITAL FUND AND THE CARNEGIE FOUNDATION.

The name of the late King Edward, of England, will always be remembered in connection with the fund for the support of the various London hospitals, which he was active in founding in 1897, on the occasion of the 60th anniversary of his mother's ascension to the throne. This fund has grown rapidly and in 1908, about eight million dollars was available as a principal, and nearly one million was divided among the different institutions. The influence of this fund has proven to be much more remarkable in controlling the various institutions than the amount of money distributed. In connection with the fund there is a central bureau which keeps an account of the number of patients treated, the character of their treatment, and the expense connected with each hospital. A hospital desiring money from the fund must be investigated by the officials, who view the books and test the management, and if abuses are found, demand their removal before a penny is given. If these

reasonable demands are not complied with the hospital in question is stricken from the list, and fails to receive anything from the hospital fund. Very quickly it is deserted by all charitable persons and finally disappears. Formerly there were many small, entirely superfluous, little institutions which owed their existence alone to the enterprise of a practitioner who desired to boost himself and his business and with the help of a few deluded, benevolent old spinsters, would establish a hospital which often had more employees than patients and because of the chronic want of funds was furnished and conducted in the most disgraceful manner. By the influence of this foundation such institutions disappeared entirely or united with larger hospitals, or when necessary, by the help of the fund were rebuilt and modernized. Besides, the cost of caring for the sick was remarkably reduced, even in the best hospitals, when it was found that every penny must be accounted for. In this way the King Edward Hospital Fund became an institution of the greatest importance, and a blessing, and it is believed that the influence of this undertaking will increase from year to year.

We have given an exact review of the hospital fund in London, because it appears to us a good example in a different direction, of what the Carnegie Foundation for the improvement of medical teaching in the United States and Canada, will do for the people and profession on this side of the water. It seems hardly possible that Mr. Carnegie could foresee how enormously important the foundation would be for the health of the people. In this issue we reprint the report of the Foundation, which appears in Bulletin No. 4, having reference to the State of Illinois, and wish that every one of our members might secure a copy of the full report and might himself judge of the justice and importance of this publication. The report will be sent to any one sending 17 cents for postage to the editor of THE JOURNAL. Being to a certain extent familiar with the subject of medical education in America, for the past third century, we acknowledge ourselves astonished at the state of affairs found by the investigators of the Foundation. We thought the conditions existing in Chicago bad, and yet we find that even in this rotten spot of medical education in the United States conditions are much worse than we imagined. Among those who have confirmed the absolute correctness of the language used regarding Chicago are President James of the University of Illinois; President Harris, of the Northwestern University; Chairman Bevan, of the Committee on Medical Education of the A.M.A.; Chairman Norbury, of our own State Society Committee, Professors Quine, Edwards and Dodson, and members of the profession and medical students from the different schools, who declare that the language of the report is even not strong enough to describe the disgraceful conditions existing. The only persons who have ventured to discredit the report are G. W. Webster, *de facto* president of the Illinois State Board of Health, and James A. Egan, *de facto* secretary of the Illinois State Board of Health, and possibly a few members of the medical faculties in Chicago, whose methods have been hard hit by the language of the report.

That gentlemen conducting inferior schools would come out in the open enough to make a defense is probably not remarkable, but that the

officers of the State Board of Health charged by the law with maintaining the highest possible standards of medical education, should express themselves in such language as Dr. Webster and Dr. Egan used in commenting on this report, is almost past comprehension. The facts as reported undoubtedly fix the blame for these conditions on the Illinois State Board of Health. The important point now is to determine the person or persons "higher up," responsible for the Illinois State Board of Health. When these persons finally become known we prophesy that something worth while will be brought to their attention by indignant citizens. Next month we will probably take the matter up and give the names of the responsible persons. Meanwhile we behold with much satisfaction the remarkable stir caused by the publication of this report, and hope that its influence, like that of the hospital fund in London, will go on increasing in usefulness as the years go by.

THE HAHNEMANN COLLEGE ON THE CARNEGIE FOUNDATION.

An amusing utterance in connection with the report of the Carnegie Foundation is the letter from the committee of the Hahnemann Medical College of Chicago. Quite unconsciously these gentlemen have put some humor into the serious question, as the following extracts will show. The first sentence is as follows: "The daily press has in the past few days printed, as news, the *wholesome* condemnation of the Illinois State Board of Health and many of the respectable medical colleges of Chicago." Evidently the gentlemen intended to say the "wholesale condemnation," but we agree with them that their language is exactly correct and that the condemnation of the Illinois State Board of Health and most of the medical colleges of Chicago is *wholesome*. Again the committee says: "The *light-sounding* phrase, "Elevation of the Standard," takes well with every ear of culture, and if the object of the medical college is to graduate a lot of immature scientists instead of practical doctors who are capable of entering the field of medicine and capable of preventing and curing disease, then by all means place our medical colleges under the supervision of the scientist. In truth, it would be as sensible to place all schools of law in charge of a group of ministers because through their study of moral law they could formulate more ideal rules for civic and individual guidance." Evidently the committee intended to say, the high-sounding phrase, but we quite agree with them that the entire text of the letter as printed in *The Clinique*, of Chicago, June, 1910, is "*light sounding*" except in the first sentence, which we have already quoted and commented on. We congratulate these gentlemen for their very successful effort in unconsciously and amusingly approving the work of the Carnegie Foundation. The executive committee of Hahnemann College, we understand, is composed of Drs. Chislet, Kahlke, Wilson, McDowell, Halbert, Cobb, and Mitchell. These names will go down into history along with the *de facto* president and

de facto secretary of the Illinois State Board of Health as opponents of the highest ideals in medical teaching. The committee also labors under that heavy delusion that "the graduates from homeopathic schools are too few to meet the demand."

ECLECTIC JOURNAL CONFIRMS THE CHARGES.

The May issue of the *Eclectic Medical Journal* of Cincinnati, Ohio, contains the following reference to the standing of the Illinois State Board of Health, and the Chicago medical colleges. The statement occurs in a paper read before the Ohio Association of Medical College Teachers, and was made by Dr. John Scudder, of the Eclectic Medical Institute of Cincinnati.

"In 1878 the Illinois State Board of Health secured and has since had quite a reputation for medical college regulation and rule, but if it is to be weighed now by the loose methods of the so-called 'deputy medical examiners' and the 'correspondence methods' of even the highest university of the state, it certainly will be found wanting. Professor Albright, the Ohio examiner, can bear me out in this statement, but the length of my paper forbids more than alluding to this condition and similar conditions in some southern and western states."

THE SALE OF ANTITOXIN IN CHICAGO.

The *Druggists' Journal* of Chicago, under date April 30, 1910, makes the following statement regarding the sale of antitoxin in that city. It appears that the antitoxin supplied by the Memorial Institute is sold to the druggist at a very reasonable rate and apparently is preferred by many people to the free antitoxin supplied under the state appropriation.

"The sale of antitoxin by druggists is quite active, according to reports received from the city hall, and every C. R. D. member should be prepared to take care of his share of the business."

"We are advised that the agents appointed by the State Board of Health are also selling as much Memorial Institute antitoxin as they are giving away under the state appropriation. This means that practically all of the people who can afford to pay for antitoxin are compelled to do so, the free goods being supplied only to the indigent."

"We fear that some of our members are not living up to their opportunities in this matter by keeping on hand at all times Memorial Institute antitoxin and urging doctors to specify it, thereby making a large sale for the goods which will yield the druggist a fair profit."

PERNICIOUS ACTIVITY OF THE ANTI-VIVISECTIONISTS

From New York we learn that the Anti-vivisectionists have taken new activity and are giving exhibitions which are merely gross misrepresentations, and in many instances falsifications which cannot be regarded as

entirely unintentional have so presented animal experimentation to the onlookers as to cause the impression in their minds that scientific experimental laboratories are dens of exquisite torture and that qualified experimenters are conscienceless fiends. How many converts are thus gained to the cause of anti-vivisection we have no means of knowing, but as the leaders seem to have abundant funds for their purpose, their supporters are possibly both numerous and generously disposed. We understand it is proposed by these people to invade county fairs with their exhibits in order to gain the support of the citizens at the meeting of the next legislature. The New York committee request all county medical societies to exercise their influence with officers to prohibit this unsightly, demoralizing and misleading exhibition to be held in connection with their displays. We trust our members will bear this in mind and be on the lookout for these people.

EDITORIAL NOTE.

Dr. A. E. Bulson, editor of the *Journal of the Indiana State Medical Society*, of Fort Wayne, Ind., attended the Danville meeting of our society and in the June issue of his journal makes some complimentary allusions to our society. We quote the following: "The Illinois State Medical Society held its annual session at Danville May 17 and 18. The attendance was very large, and the scientific, social and political program was carried out with a good deal of enthusiasm and interest. The conference of county and district medical society officers was particularly well attended, and the reading and discussion of papers proved a valuable feature for those who are interested in organization work. The work of the conference could be profitably duplicated by other state associations whose life depends upon the enterprise, activity and interests of its officers.

"The Committee on Arrangements for the Annual Session of the Indiana State Medical Association might profitably duplicate the plan of the Committee on Arrangements for this year's meeting of the Illinois State Medical Association by repeatedly notifying members of the association concerning the date of the session, the program to be offered, the social features arranged, the kind and character of hotel accommodations to be obtained, and the railroad and traction facilities for reaching the place where the session is to be held. The success of any session depends not only upon providing a good program and suitable entertainment, but in liberally advertising the session so that members of the association will have no excuse for forgetting the date of the session and the opportunity will be afforded of absorbing a little of the enthusiasm of those who are responsible for the success of the session."

WANTED.

One copy of the Transactions of the Illinois State Medical Society for 1894. One dollar and a half will be paid for same if sent prepaid to the editor's office.

COUNTY AND DISTRICT SOCIETIES.

BOONE COUNTY.

The Boone County Medical Society met in regular session June 9, 1910, at the Commercial Club rooms, Belvidere. The meeting was called to order at 3:30 p. m. by the president, Dr. A. W. Swift. Other members present were Drs. Alden, Alquire, Andrews, Whitman, Mitchell, Merrit, Hawkey, McInnes, McCracken, Foote, Butterfield and Delavergne. Dr. H. E. Delavergne was elected secretary-treasurer to fill the unexpired term of Dr. Charles Scott, resigned. Dr. Clara B. McCrackin was elected to membership. Dr. Aldin Alquire read a paper on "Observations in Obstetrics" which elicited a very thorough discussion. Dr. R. W. McInnes, delegate, gave a detailed report of the state meeting at Danville. Meeting adjourned to meet Oct. 13, 1910.

BUREAU COUNTY.

The thirty-third semiannual meeting of the Bureau County Medical Society was held in the city hall, Princeton, May 12, 1910, with Dr. A. E. Owens in the chair. The following members were present: F. C. Robinson, William Keller, W. E. Howard, H. D. Steele, W. L. Linebery, H. M. Owens, A. E. Owens, J. H. McLain, M. H. Blackburn, S. W. Hopkins, William Kaull, C. C. Scott, J. H. Franklin, C. C. Barrett, M. J. Coveny, J. F. Lewis, O. J. Flint. Visitors: M. L. Harris, Chicago; George S. Zellers, Peoria; J. N. O'Malley, Ohio; Dr. Fenway, Galesburg; E. W. Weis, Ottawa; A. G. Downer, Princeton, and Dr. White, Princeton. The minutes of the preceding meeting were read and approved. Announcement was made of the meeting of the State Medical Society at Danville, and the meeting of the American Medical Association at St. Louis. The applications of Dr. E. H. Bishop, Neponset; Dr. E. M. Byers, Buda; Dr. C. H. Dunn, Ladd, and Dr. J. N. O'Malley, Ohio, were acted upon favorably, and they were duly elected members of the society. The regular Board of Censors being absent, Dr. Barrett and Dr. Hopkins were appointed to fill the vacancy. Dr. W. E. Scarborough, formerly of Sullivan, and a member of the Moultrie County Society, and lately located in Dover, presented his transfer, and was duly made a member of the Bureau County Medical Society. The motion prevailed authorizing the secretary to pay from the funds of the society dues to the State Society, which had been advanced for delinquent members.

The motion was made and carried that the president be authorized to appoint a substitute, in case the delegate or the alternate delegate to the state meeting was unable to attend. A letter from the district councilor was presented, which asked the society to give an expression of their opinions in regard to the campaign for better medical schools, a higher standard of medical education, and whether or not the duties of supervising the public health, and of determining the standing of medical colleges and examining and licensing medical graduates should be in the hands of one board or in one especially appointed for that purpose; and as to whether or not the executive board of health should be in charge of a trained sanitarian. As there were only a few of the members present, and they felt that they were not sufficiently informed on some of the subjects, it was decided to defer action until some future time. The following resolutions were adopted:

WHEREAS, Senator Robert L. Owen has introduced in the Senate of the United States a bill (S. 6049) establishing a Department of Public Health; and

WHEREAS, This subject has long been under discussion by the medical profession, which discussions have been unanimously in favor of the same; it is hereby

Resolved, By the Bureau County Medical Society, in semi-annual session, that we heartily endorse the above mentioned bill and urgently and insistently request our representatives in the Senate and in the House of Representatives to use every endeavor in their power to secure the passage of this bill into a law; be it further

Resolved, That a copy of these resolutions be immediately transmitted by the secretary to Senators Shelby M. Cullom and William Lorimer and to Representative Charles E. Fuller.

RECEIPTS.

1909.	
Balance on hand, November 11.....	\$26.68
1910.	
Received from dues, for year 1910.....	126.50
	<hr/>
	\$153.18

DISBURSEMENTS

1909.	
November 11, telephone boy	\$1.00
November 11, salary to secretary and treasurer.....	10.00
November 15, draft to E. W. Weis.....	22.50
1910.	
January 27, postage	2.00
February 12, telephone toll.....	.30
April 30, draft to E. W. Weis.....	90.00
May 5, envelopes	1.14
May 5, Bureau County Republican, printing.....	5.50
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Total disbursements	\$132.44
	<hr/>
Balance on hand May 12, 1910.....	\$20.74

The report was accepted as read.

Dr. George S. Zellers of the State Hospital at Bartonville gave a very interesting talk on "Pellagra," which he says is much more common than we probably imagine, and he believes that we will see a number of cases in this vicinity before the season is over. He exhibited several photographs of patients which gave a very good idea of the appearance of the disease, the skin lesion of which resembled sunburn, or any burn with large bullae. He described the disease as being incurable, though often lasting from ten to fifteen years, and was not contagious, the etiology being unknown. The skin lesions were universally bilateral. Personally, he did not believe that it was due to the use of corn. The age at which it usually occurs is over 40. Though not amenable to treatment, arsenic was of some use.

Dr. Coveny of Spring Valley then read an interesting paper on "Notes Taken from the Mayo Clinics on Gastro-Duodenal Uleers."

Dr. J. H. Franklin gave an interesting and instructive talk on the "Surgical Treatment of Infections of the Gall-Bladder," and Dr. M. L. Harris of Chicago presented the subject of "Pathology of Diseases of the Thyroid Gland."

O. J. FLINT, Secretary.

COOK COUNTY.

CHICAGO MEDICAL SOCIETY.

RECTAL ANESTHESIA.*

JAMES F. CHURCHILL, M.D.

CHICAGO.

(Author's abstract.)

* Rectal anesthesia was first used successfully in 1884, both in this country and in Europe. For some reason, however, the method fell into disuse until 1905, when Cunningham, of Boston, described a new principle of administration and reported a number of successful cases. The modification used by Cunningham

* Read before the Chicago Medical Society, Feb. 16, 1910.

was based upon the principle of introducing ether vapor into the rectum by means of passing air through warmed ether. He also provided for the escape of air and unabsorbed ether vapor from the rectum by inserting the finger alongside the rectal tube, at intervals.

Since the publication of Cunningham's report, rectal anesthesia has been used extensively in this country and in Europe. Refinements and minor changes have been made in the apparatus, but the same principle has been used by all.

The indications for the use of rectal anesthesia are two: The removal of the anesthetist and apparatus from the proximity of the operative field in operations about the head and neck and avoidance of the bronchial and pulmonary irritation from the inhalation of ether in patients who have a pulmonary lesion. The author has used the method more frequently in the first class of cases and has found it very satisfactory to the operator, especially in operations in and about the mouth.

The apparatus used is very simple and easily made, and has been very satisfactory. It consists of an eight-ounce bottle, fitted with a two-hole stopper, into one opening of which is passed a glass or metal tube, which reaches to the bottom of the bottle; into the other a tube reaching just within the stopper. The longer tube is connected with a hand bulb; the shorter with the rectal tube. Provision is made for the escape of air and gas from the bowel by means of a "T" tube. The ether bottle is placed in a vessel containing water at a temperature of 37° C.

About an equal number of the anesthetics have been started by gas-ether inhalation and by the rectal method. The former saves time, but either is satisfactory. The colon is filled every three to five minutes, care being taken to avoid overdistention. The air is allowed to escape each time before refilling.

Careful and thorough emptying of the bowel has been found to be a very important prerequisite. No difficulty in maintaining anesthesia is encountered, if a free return of gas and air from the rectum is obtained.

The author's experience has been limited to 47 cases, covering a wide range of operative procedures. The method was unsatisfactory and was discontinued in 5 cases. Four of these failures were due to insufficient preparation of the patient; the fifth to leaky apparatus. It has been found to be unsatisfactory, from the operator's standpoint, in abdominal work (except in gall-bladder drainage), on account of intestinal distention.

No anesthetic mortality and no rectal irritation followed any of the anesthetics.

CHICAGO OPHTHALMOLOGICAL SOCIETY.

Regular Meeting, March 21, 1910.

A clinical meeting was held March 21, 1910, at the Illinois Charitable Eye and Ear Infirmary, Dr. W. A. Fisher, president, in the chair.

SHORTENING OF AN OCULAR MUSCLE BY TUCKING.

Dr. H. W. Woodruff exhibited several patients on whom excellent results had been obtained by an operation which he had performed in more than fifty instances. Dr. Woodruff makes a vertical incision in the conjunctiva only which is dissected from the capsule as far as possible. An opening is made with the straight scissors at the lower border of the tendon near its insertion, and the strabismus hook passes through this opening and under the tendon. This opening is then enlarged parallel to the lower border of the muscle and a similar incision made along the upper border of the muscle, so that the muscle is exposed as far back as possible. While the conjunctival flap is held out of the way by an assistant, a needle threaded with OO formalized catgut is passed from below upward as far back from the tendon insertion as possible. This is tied in the manner of Worth, including, however, muscle and capsule only. The needle, which now is under the muscle, is then passed through the tendon at its insertion very close to the sclera, from underneath out. A similar suture is passed through the upper

border of tendon and capsule. When these sutures are tied, a fold is produced in the tendon and capsule at its insertion in the sclera. The sutures should be tied in three knots to prevent loosening. The conjunctival wound is closed with silk sutures and bandage applied. Anesthesia is secured by the instillation of cocain and the subconjunctival injection of cocain and adrenalin.

Dr. Gradle for several years has done an operation similar to Dr. Woodruff's in principle, but technically simpler. He splits the tendon horizontally for a length of 10 to 12 mm. from its insertion towards the canthus. Incising through the conjunctiva without dissection, the sclera is exposed in the wound and the muscle, and tendon freed with a hook. A horizontal suture is placed under each longitudinal half of the muscle, one needle bringing it out through the tendon close to the sclera while the rear needle penetrates from within outward the belly of the muscle with all the tissue covering it. The distance between the needle-exits depends on the intended shortening. The peripheral ends of the two threads are tied together preferably over a miniature aluminum plate with two eyelets. If the two anterior ends of the thread are now knotted also over an aluminum plate the amount of shortening is regulated by the tightening of the loop. The tuck in the muscle spreads out laterally from the wound and is not very conspicuous. The objection of this simple and easy operation is its small effect. The threads have seemed to cut to some extent through the belly of the muscle and the effect is not as great when healing is completed after seven days as when the thread is first tied. But the result obtained after the end of the first week has always remained permanent.

Dr. Richard J. Tivnen has seen Dr. Woodruff perform his tucking operation and has also used his method in two cases of his own. Judging from the results obtained it would seem to be a very satisfactory operation. The technic is not more difficult than the Worth procedure and, with Dr. Woodruff's method of local anesthesia, the cooperation of the patient is easily secured in the majority of instances. The "lump" occasioned by the "tuck" is quite prominent at the conclusion of the operation but it gradually disappears and in no instance has Dr. Tivnen observed it remaining as a permanent disfigurement. As Dr. Woodruff remarks, the only difficulty is to place the sutures far enough back in the muscle. The instrument Dr. Tivnen presented is used by the rhinologist and it occurs to him that it might be so modified as to overcome the difficulty of inserting the posterior sutures to which Dr. Woodruff refers. Dr. Tivnen is having one made to conform to the modifications he has in mind.

RECURRENT GLIOMA.

Dr. W. H. Wilder presented a well-developed, apparently healthy boy aged 3 years who was first seen in the dispensary of the Illinois Eye and Ear Infirmary in July, 1908. The pupil of the right eye was moderately dilated and a grayish reflex was seen. Tension was normal. Diagnosis of glioma retinae was made and immediate enucleation advised. This was declined and the boy was taken to two other ophthalmic surgeons who also advised removal of the eye. This advice was not followed and the parents had the boy "treated with medicine" for a year, at the end of which time the little patient was again brought to the clinic with a large tumor protruding from the eyeball and from the orbit.

Complete exenteration of the orbit was performed, the bones being denuded of periosteum. Patient was then treated for several months with x-rays, and the orbit filled in nicely with apparently healthy granulation tissue. Two months ago signs of recurrence appeared, and at present a firm mass pushes the eyelids forward. Boy is bright and in good health otherwise, and gives no evidence of brain involvement. The mass will be again removed and the bones scraped, and the x-ray treatment continued.

RAPIDLY GROWING ROUND CELLED SARCOMA OF ORBIT.

Dr. Wilder also exhibited a girl aged 3 years, well-developed and nourished, who was first seen in the dispensary of the Infirmary, Dec. 15, 1909. The right eye was reddened, and protruded to a slight degree, because of some swelling of

the orbit. Pupil mobile and reacted to light. Movements of eyeball somewhat restricted. The history was that the eye was normal up to about two weeks before, at which time, when at play, her little sister had stuck some scissors in the eye causing a slight wound that did not bleed much. The next day the eye began to swell. Ophthalmoscopic examination showed that the fundus was normal. No wound could be seen in the sclera or conjunctiva. The swelling increased and the patient was taken into the hospital Dec. 29, 1909. The child began to have increased temperature which at one time reached 101.6. The swelling increased rapidly so that in a few days the lids could not be closed and the cornea sloughed.

On Jan. 11, 1910, or six weeks after the original injury the right orbit was completely exenterated, the eyelids being left. The child recovered nicely and is still in good health. Histologic examination of the growth shows a large round celled sarcoma.

BILATERAL EXOPHTHALMUS.

Dr. Wilder showed the case of bilateral exophthalmus in a man aged 45 years who had been exhibited at the previous meeting. The exophthalmus was of five years' duration and was marked. The lids could still be closed, but the lower conjunctival fornix protruded. Skiagrams showed no bony growth. Ophthalmoscopic examination revealed slightly congested retinal veins and a beginning optic neuritis in each eye. R. V. 20/120; L. V. 20/70. March 2, 1910, a Kroenlein operation was done in the left side and a large tumor mass was removed from the left orbit that did not involve the muscle cone. Prompt recovery from the operation was marred by a furious facial erysipelas that developed the day after, but with the subsidence of this, it was noted that the swelling of the right orbit was very much less than it had been. As a result of the operation the condition of the left is improved. The optic neuritis seems to be subsiding and vision of that eye has risen to 20/50. The growth is being prepared for examination and its nature has not yet been determined.

Dr. C. A. Leenheer:—I am glad to see that Dr. Wilder did the Kroenlein operation instead of the Halsted of which he spoke at the last meeting. At this meeting I asked Dr. Wilder why he did not advise a Kroenlein. His answer was very much against the Kroenlein.

My entrant thesis presented and read before this society, reported an orbital tumor removed by the Kroenlein method. The operation was not performed by me but by Professor W. Schroeder of Northwestern University Medical School and he had no trouble in separating his osteoplastic flap and exploring all of the orbital cavity. The report of the laboratory was an hemangio-endothelioma. I would like to know the laboratory findings in Dr. Wilder's case.

TUBERCULOUS ULCER OF THE CONJUNCTIVA.

E. V. L. Brown: Mrs. J., aged 32 years, first noticed an ulcer on the left lower lid conjunctiva 11 weeks before I saw her and stated that the lesion had changed little in that time. I found the lower left lid border thickened and the inner half, especially, diffusely red and tumefied to the median line. A saucer-shaped ulcer involving the back half of the free lid border, Meibomian gland ducts and adjacent conjunctiva lies 5 mm. temporal to the punctum; it is 3 mm. wide, 1 mm. deep, has a yellow white quite smooth floor, and no undermined or indurated border; a more moist and superficial extension is seen at the temporal edge. The lid conjunctiva lateral to the ulcer presents 10 to 15 round or oval elevated follicle-like nodes in the subepithelial layer; they are distinctly yellowish in color and often grouped in packets of 3 or 4 each. The intervening conjunctiva is considerably reddened and injected. The preauricular gland is swollen. Smears show numerous typical and atypical tubercle bacilli (Prof. Harris, University of Chicago); the guinea-pig into whose anterior chamber a piece of the excised tissue was placed was eaten up by rats about two weeks after the inoculation and before any iris tuberculosis had developed; a diagnostic injection of 1 mg. of tuberculin gave a positive general and local reaction; no evidences of tuberculosis in other parts of the body could be found by Dr. Woodyatt.

The patient is now in her seventh week of a course of "bacillen-emulsion" subcutaneous injections according to the revised recommendations of Hippel, recently published by his assistant David, and the ulcer is smaller but the follicles unchanged.

BILATERAL PRIMARY INFLAMMATORY GLAUCOMA; TENSION RELIEVED BY CYCLODIALYSIS.

E. V. L. Brown:—P. V., aged 59 years. Vision has gradually failed in each eye the past 5 or 6 years. One finds total marginal glaucomatous excavations of both discs. Right tension is at the upper physiologic limit; left tension $+1$; the Schiotz tonometer reads right 54 mm., left 66 mm. Cyclodialysis was done on the right eye 28 days ago and upon the left eye 10 days ago and reduced tension to a point normal, below, to the touch in each eye and to 19 mm. by the tonometer in the right eye. The left tonometer tension has not yet been taken.

CUPPING OF BOTH DISCS WITH AMAUROSIS POSSIBLY FROM METHYL ALCOHOL.

E. V. L. Brown:—F. P., aged 59 years. Three years ago patient awoke one afternoon to find himself completely blind. The day before he had spilled a large quantity of wood alcohol down his leg, filling his shoe. He allowed his clothes to dry without changing them, but soon became dizzy and went home. He returned to work the next day but again had to leave for home and go to bed on account of dizziness. Vision gradually improved so that four months later he considered returning to work, but after seven months vision had become as bad as it is now and has remained so. He has been under my observation the past year only. One finds vision in each eye reduced to light perception and light from any direction projected into the temporal field. The pupils are about 6 mm. in size and almost fixed to light. The discs are blue white and sharply outlined and surrounded by a halo of glaucomatous chorioidal atrophy; the lamina cribrosa shows over a large portion of floor and the vessels are of good calibre. A complete and ampulliform excavation of the nasal halves of each disc is present. The difference in level between the floor and edge of the disc is 3.5 D. on the right side and 2 D. on the left. The scleral rings overhang the floor in more than one-half the circumference on each disc. The large vessels are all displaced to the nasal half and disappear beneath the undermined edge of the scleral ring to reappear on its overhanging anterior surface. In the temporal halves the surfaces slope gradually up to the edge of the disc and the scleral ring is nowhere undermined in these halves.

The tension has been studied with especial care. To the touch it has always seemed to be at the lowest border of the physiologic limit. For 75 consecutive days it was studied with the Schiotz tonometer and was never higher than 14.5 mm., although it has been as low as 8.5 mm. Two weights were always used. We have then a so-called "glaucomatous" excavation of the nasal halves and an "atrophic" excavation of the temporal halves of each disc without demonstrable increase of tension.

Heinrich Mueller first held that the glaucomatous cup is caused by increased intraocular pressure. In cases of simple glaucoma it has been contended that increased pressure would be found if carefully sought for; but in this case I have been unable to find any increase for a period of two and a half months in the third year of the disease. Schnabel believed that the increased pressure did not cause the cup and that it was due to a cavernous or lacunar atrophy of the nerve substance in its intrascleral portion with subsequent fusion of the tiny cavernæ into one big cavern. Schnaudigl, Schmidt-Rimpler and Elschmig have reported the same type of atrophy in glaucoma. Yet the same cavernæ have been found in myopia by Axenfeld, Polatti, and Stock. Furthermore the cup has been seen to disappear when the increased tension was relieved (and even to return again with a second increase of tension) by Axenfeld, Czermak, Saehs, and indeed by Schnabel himself. Schreiber reports a case of lacunar atrophy in a child dying with multiple sclerosis of the brain and cord with a typical total shallow saucer-shaped excavation of the disc.

What effect the wood alcohol may have had in the production of the glaucomatous excavation in this case I am unable to state. The history is typical of such a poisoning, but the retrobulbar neuritis and simple glaucoma may have been merely coincident. I can find no cases of ampulliform excavation of the disc involving either the whole of the circumference or a portion of the disc in the literature of toxic amblyopia.

A CASE OF ARGYROSIS.

Dr. M. H. Lebensohn presented Mrs. D. M., Russian, aged 46 years. Ten years ago, while living in Russia, patient had smallpox. For the ocular involvement at that time she was given an eye-wash which she used three or four times daily for two months. She claims not to have used any eye medicine since. Dr. Lebensohn first saw her three and a half years ago. The entire conjunctiva including the palpebral portion with the exception of a small triangular space at the outer canthi was coal black. Vision was fingers at six feet in both eyes due to corneal opacities covering entire cornea. Under the use of powdered dionin, vision has greatly improved to 20/120 in each eye but the discoloration is almost as marked as before. This patient was exhibited about two years ago by Dr. Nance before this society.

RUPTURE OF THE SCLERA.

Dr. Dwight C. Orcutt presented a man, aged 77 years, who on Jan. 3, 1910, fell striking his left eye on chair post. He suffered extreme pain two weeks with practically no treatment. Thirteen days later vision equaled shadows. Tension 1. Rupture of sclera in the upper nasal quadrant 2 mm. from corneo-scleral margin. Prolapse of chorioid and ciliary-body protruding 2 mm. and 4 mm. in diameter in about the size of a split pea. Four days later, wound was sutured with mattress stitch bringing conjunctival flap over all. Owing to adhesions it was necessary to remove part of prolapse. Tension persisted almost uninterrupted until stitches were removed. From that time normal tension steadily improved until present time when with correction of refractive error patient has 6/9 vision and reads Jaeger 1.

SYMPATHETIC OPHTHALMITIS FOLLOWING A CATARACT OPERATION.

Dr. Willis O. Nance exhibited a man aged 31 years who entered the Infirmary six months ago with a well-defined sympathetic inflammation of the right eye. He gave a history of having a cataract extracted from the left eye four months previously. This eye was absolutely blind and was enucleated, patient was put to bed in a darkened room and from 130 to 160 grains of sodium salicylate were administered daily, for several weeks. Within six weeks the eye was quiet. At the present time there is an apparent *occlusio pupillæ*, yet patient is able to count fingers at 5 feet. This is the first case of sympathetic ophthalmitis following cataract operation that Dr. Nance has observed.

SYMPATHETIC OPHTHALMITIS; RECOVERY WITH USEFUL VISION.

Dr. Nance also presented a man, 29 years old, who developed a sympathetic ophthalmitis last October, 11 years after a perforating ciliary wound. When patient entered hospital five months ago there was every typical symptom of sympathetic ophthalmitis. Enucleation of the "exciting" eye had been advised. Vision of the injured eye was 3/200 and of the other was 6/200. Under atropin, confinement in bed in a dark room and mercurial inunctions and later massive doses of sodium salicylate both eyes rapidly improved in five weeks so that vision was 20/100 and 20/30 respectively.

PENETRATING INJURY OF THE EYE WITH SOME UNUSUAL COMPLICATIONS.

Dr. Richard J. Tivnen:—Edward D., aged 14 years, two and a half years ago while engaged in cutting string, knife slipped, striking right eye. Patient states that eye was never reddened, inflamed, painful or tender; only discomfort experienced was inability to see. Returned to school three months after injury; nine months later compelled to leave school on account of "blurring of vision, black

dots and cobwebs," affecting left eye. Patient first presented himself at this time for examination fifteen months after injury. There were no evidences of irritation or inflammatory process. Vision equaled perception and projection of light; globe presents a linear corneal cicatrix, one-eighth mm. in length, situated slightly above pupillary area and extending from outer limbus, horizontally inward across the cornea. The iris is adherent throughout whole extent of cicatrix and its pupillary margin drawn to upper temporal quadrant; posterior synechia, pupillary reflexes, tension and palpation, negative; lens cataractous; physical examination, Von Pirquet tubercular reaction; urinalysis, negative.

Left vision 20/120; no external evidences of an inflammatory process. Fundus, a "brick dust" exudate in vitreous, obscuring disc; slightly below macular region a chorioidal patch, crescentic in form, one-half diameter of disc; densely pigmented at its upper part. Complete rest of eyes, saturated solution of potassium iodid increasing doses and inunction of hydrargyri; patient improved and returned to school. Continued in school for five months when "spots and blurring" returned and compelled again to forego studies. Previous treatment resumed with the addition of pilocarpin sweats. Vitreous is clearing and patient is gradually less distressed with "spots and blurring" of sight. The nature of the lesion in the uninjured eye, is the perplexing question, in this case, whether it be a sympathetic process, consequent upon injury or a periodic lighting up of an old chorioiditis.

DISCUSSION

Dr. Cassius D. Wescott: Dr. Tivnen's case recalls a report made some years ago by Dr. Ayres of Cincinnati of some similar cases in which he asked the question: Is there a pseudo sympathetic ophthalmia? Without having an opportunity to make further study of these eyes I should regard this as a case of sympathetic ophthalmia and enucleate the blind eye.

DETACHMENT OF THE RETINA.

Dr. Emily H. Selby presented Mrs. M., aged 45 years, who had a detachment of the retina involving the inferior quadrant.

The case was of especial interest from the fact of its sudden occurrence. The patient suffered a severe headache and after a brief period of sleep, discovered that she could not see well with the right eye. When she consulted Dr. Selby, vision equalled 18/200. Dr. Selby questioned the advisability of operative procedure.

WILLIS O. NANCE, Secretary.

Regular Meeting, April 18, 1910.

A regular meeting, April 18, 1910, with the President, Dr. W. A. Fisher, in the chair.

THE INTERCAPSULAR CATARACT OPERATION AS PERFORMED AT JULLUNDER, INDIA.

(Abstract.)

Dr. D. W. Greene, Dayton, Ohio:—At Jullunder there are three operating-tables and two sets of operating instruments in constant use. While one is being used the other is in the sterilizer. A silver speculum without a stop screw is inserted. The outer one-third of the eye-lashes are clipped off as closely as possible, so that the knife will not touch them, then the end or heel of the speculum is caught with the fingers and the lids are lifted away from the globe so as to completely expose the whole conjunctival sac, which is then flushed with 1 to 2 ounces of 1 to 3,000 bichlorid solution; whatever remains is milked out (Smith calls it) by pressing down the outer angle with the thumb. The eye is then grasped at the lower corneal border, with strong mouse-tooth fixation forceps which take a deep hold, and the eye, if small, is lifted from the depth of the orbit (this is easily done if the patient does not resist), and turned outward so that the knife in its sweep across the anterior chamber shall not prick the nose when the counter puncture is made, but shall rather go over its bridge. The blade of the knife for this section should not be less than one and one-eighth inches long;

one and one-fourth inches is better. It should be entered well back in the sclero-corneal junction, so that the section shall equal one-half of the circumference of the cornea. *This size of the section cannot be too much emphasized.* Entering the knife at an angle of about 20 degrees above the horizontal plane; in this position almost any knife will ride over the iris without picking it up, and the counter puncture can be made well back in the angle. As soon as the point of the knife emerges, if the eyeball is in proper position, the hand should be slightly lowered and the knife pushed through to its heel, and the inclination of the blade should be changed so that the section shall be completed 2 millimeters within the cornea. This section should be a smooth and curved one, every plane parallel to every other plane. There will be no stairsteps, such as result when the sawing motion is made. Primary union is the rule. Before the germs of infection can develop, the wound is closed. To this section the speaker believed the wonderful results at Jullunder are largely due. Dr. Greene thinks much of Smith's success is also due to the marvelous skill with which he can make this section *with marked uniformity*, and deliver the lens without much pressure or bruising. He has not seen his equal in this or any other steps of cataract operating.

The iridectomy is the next important step. In an experience of 150 operations before going to India, Dr. Greene became convinced that it should be made as small as possible. He takes a small hold of the iris and cuts it off at a right angle to the section; that is, cutting from below upward with the scissors and not cutting it parallel with the section. A small iridectomy will permit the necessary drainage, and the pillars are not so apt to become entangled or prolapsed as when it is made larger; another reason for making it small is the tendency of the vitreous in certain cases and in certain nervous patients to balloon up and crowd the pillars apart and sometimes make the small iridectomy too large to look well, and lastly, toilette will be much easier to make and the resulting coloboma much nearer the ideal keyhole shape.

The speculum is now removed and the assistant inserts the large hook under the upper lid and elevates and draws it outward in line with the axis of the orbit. The second, third and little fingers should press on the orbital ridge to help control the muscle, and with the left thumb he should pull down the lower lid.

The delivery of the lens in its capsule is the beginning, middle and end aim of the Smith operation; all other steps are preparatory to it, because whatever of merit it has and whatever place the future shall assign to it among cataract operations, must ever hinge on delivery of the lens in the unopened capsule with a minimum of trauma. While the size of the section is all-important because a large lens cannot be crowded through a small opening without danger of rupturing the capsule and bruising the parts, the size of the iridectomy also has much to do with the after-appearance of the coloboma. The speaker was convinced that the amount and direction of the pressure used to deliver the lens is of more vital importance if possible, to the success of the operation than the size of the section. The section can be described so that one may imitate it, and make it large enough, but it is not possible to describe the amount and direction of the pressure necessary for the delivery of the lens, to one who has not seen it done. Sections will vary in size. Lenses vary and act differently in delivery. The strength of the zonula cannot be foretold. The escape of the aqueous often reveals a low tension of the globe that was not anticipated. All these are complications which no description can properly describe, but the harm which may result from any of them, experience and skill may obviate. To deliver an immature lens requires one kind and direction of pressure; to deliver an intumescent or a hypermature cataract requires an entirely different kind and direction of pressure. These manipulations are purely matters of technic, which can only be learned by seeing a large number of operations performed by one skilled in the method and then performing a large number of operations under his direction. The next important step is the toilette, which is of even greater importance to the future well-being and appearance of the eye than the toilette after the regular combined operation. The lens in its capsule is usually a much larger body than the same lens would be with its capsule and perinuclear layers or soft cortex left behind or pressed out

ahead of the nucleus. Hence there is usually more crowding of iris pillars into the angles of the section. This must be replaced if possible and a small coloboma secured. Nothing except loss of vitreous should be allowed to defeat this purpose. During the delivery of the lens and completing the toilette the patient must look well up. This is the position the eyes take in sleep. There is muscular relaxation and freedom from compression from the globe. Without attempting to be exact, the speaker suggested that he had seen as much loss of vitreous from the patient violating this injunction as from all the manipulations. Major Smith's teaching on this point alone is worth the trip to Jullunder. Dr. Greene thinks that any operator who will try this plan will be convinced of its superiority over old-time methods of having the patient look down while the lens is being delivered and the toilette made.

The steps of the toilette have lately been greatly improved at Jullunder. The speaker has recently written an article on this subject in the *Ophthalmic Record* of February, 1910.

As to the assistant, no man can do justice to the operation or to himself with an assistant who is untrained or unskilled. His duties are different from those of the operator, but they are not less important to the success of the operation. His duties may be briefly summed up. He must expose to view the whole operative field and take off all pressure from the eyeball. While the after-treatment of patients operated on by this method in India was very simple, practically *nil* it may be said, the same cannot be said of them in this country. For some reasons which were not clear to the speaker at this time, patients sometimes require considerable after-treatment. Inflammatory reactions are comparatively rare, therefore it is very seldom indeed that patients complain of pain during convalescence, but their eyes become red. After the first dressing, the distinct tracery and pattern of the iris is maintained, showing its freedom from inflammation. In the vast majority of cases the condition seems to be one of irritation rather than of inflammation. The closing of the section has usually been prompt and firm. The speaker did not know that cases of slow closure have been any more frequent than after the old operation where the wound has reopened from coughing, straining at stool or striking the eye, and the iris may or may not become entangled or prolapsed and the convalescence be prolonged. Dr. Greene has not yet compiled statistics covering this point. The question of the evils which may follow a loss of vitreous (often one-third its volume) if one may judge from the literature on the subject and from personal experience, seems to have been exaggerated. Delayed healing of the section sometimes occurs, but the same is observed after the regular operations. In this connection the essayist had only been able to diagnose one case of detachment of the choroid in association with delayed healing, and that did no harm beyond the delay it seemed to cause.

The address was illustrated with lantern-slides of the old and new hospital, patients, etc. The wards and immense verandas are a great feature in all oriental hospital buildings. There are as many beds on the verandas as in the wards. The operating-rooms are as up-to-date as they can be in an oriental city of 75,000 people, where there are no water-works, sewers or other modern necessities. But the people have with great uniformity certain racial characteristics which probably have much to do with the success of the operation among them. It is rare indeed to see a native male or female, if an outdoor laborer, who carries a pound of superfluous flesh. The men are all tall and lean and lank. The women are not so tall, but are lean and lank and ugly. Gout and rheumatism are rare. Their meagre vegetable diet probably has much to do in preventing these vices of civilization among them. These are the bane of cataract operating in this country. Syphilis was not often met with and the Hindus may be said to be temperate, and the Mohammedans are abstainers, so that these vices seem to entitle little figure as a contributing influence to complications during the healing process.

DISCUSSION

Dr. Thomas Faith asked whether the retarded healing which sometimes occurs predisposed to infection. Dr. Greene replied that if the section was not smooth and

the edges did not closely coapt so that healing by granulation took place, there was danger of infection, but no greater than after the regular operation. He saw only four cases of infection in about 1,200 operations. This small per cent. he thought was largely due to the thorough flushing of the conjunctival sac, and to the smooth section which closes before the germ of infection can develop.

Dr. Oscar Dodd asked whether immature cataracts are all extracted by turning them over. Dr. Greene said that the immature cataract seldom or never turns over. The only lens which will turn over in delivery is one with a small nucleus and mushy cortex, which permits of moulding itself to the hour-glass shape. These are the intumescant and hypermature. A totally sclerosed lens cannot do this and is too large to turn in the limited space within the eye.

Dr. A. H. Andrews asked whether the women in India have cataract. Dr. Greene replied that they did, but in much smaller proportion than the men. The Sikhs of the Punjab are magnificent specimens of physical manhood. They are the flower of the native army. They are tall with plenty of bone and muscle, but do not carry a pound of superfluous flesh. The women, on the contrary, are small and ugly, and while they do work in the fields with the men, they are not so constantly exposed to the rays of the sun, as household duties require that they should be indoors a part of the time, and most of the women cover their faces a part of the time. No man except the husband and the children are supposed to ever see the face of the wife and mother; therefore the women do have a measure of protection from the glare of the sunlight not enjoyed by the men.

Dr. Oliver Tydings asked as to the nature of the toilette after the operation. Dr. Greene stated in reply that owing to the poverty of the people the city of Jullunder was unable to pay for absorbent cotton and sterilized gauze, but as India is a cotton-growing country, the people furnish it to the hospital. It is sterilized in the hospital and used in that way. The first dressing was removed on the third or fourth day, when we reached Jullunder, contrary to Smith's order, and occasionally wounds would spring open at that time, because the dressers always asked the patients to look down. The vitreous may present and the iris become entangled in doing this. He has seldom had this experience, as he leaves the bandage on for eight or ten days and asks the patient to look up in dressing the eye.

Dr. W. H. Wilder asked if both eyes are operated on at the same time. Dr. Greene replied that they are, and that he has never seen any harm come from it. He has seen in two cases one eye lost from infection while the other did well.

Dr. Henry Gradle asked as to the use of atropin. Dr. Greene replied that it is used only in those cases where the capsule had ruptured. These are the cases in which inflammatory complications are so likely to occur.

Dr. Wilder asked as to whether any attempt is made to determine the degree of visual acuity after the operation. Dr. Greene replied that no attempt was made, but all who wish it get a plus 10 D. for distance or a plus 14 or 16 D. for close work. Very few can read, so plus 10 D. is the glass that is usually given.

Dr. Willis O. Nanee asked how the vision of the patients operated on in this country compared with that of patients operated on by the Major Smith method, and what was the degree of astigmatism following both methods. Dr. Greene replied that in India 80 per cent. of the people have trachoma, and one would not get good visual results when the cornea was cloudy. Many of these patients do not do as well, but that he did not know whether they differed much from patients operated on by other methods. In seventy-five cases reported on by him last year he got very much better vision, an average of 20/40 by the capsulotomy method and 20/27 by the Smith method. The patients were nearly all old men, average age 67, inmates of the soldiers' home. The amount of astigmatism depends almost entirely on the incision. If the Smith incision is correctly made there is a low degree of astigmatism. This incision must be made with a knife blade one and one-quarter inches long; the regular von Graefe one and one-eighth inch knife will do if it has not been sharpened too often. The incision must be a clean straight one, made by a hold push and not by a sawing motion. The edges of this section coapt and seal up quickly.

Dr. Nance suggested that it seemed necessary to use considerable force with the hook on the cornea in order to express the lens, and that, therefore, abrasions or ulcers of the cornea might be apt to occur. Dr. Greene replied that he has never seen ulceration follow, although abrasion occurred formerly when the cornea was rubbed too much, but since he had learned the correct technic he did not have it.

WILLIS O. NANCE, Secretary.

JACKSON COUNTY.

The second quarterly meeting of the Jackson County Medical Society was held in the parlors of the Jackson Club at Murphysboro, June 16, 1910. Members present: Drs. Carter, Estel, Horstman, Essick, Wayman, Ormsby, Keesee, Mitchell, Etherton, Molz, Agnew, Grizzell, Neber and Sabine. Visitors: Mr. John Hrabik, Drs. Lightfoot, Barrow and Whitacre, of Carbondale; C. M. Thompson, Makanda, and Riesling, Murphysboro. Dr. Barrow was elected a member upon vote of the secretary. The applications of Dr. Riesling, Murphysboro; Whitacre, Carbondale; Bennet, Ava, and C. M. Thompson, Makanda, were read and given to the board of censors, their report being favorable.

Dr. C. O. Molz presented the following resolutions:

Resolved, That at the next meeting the by-laws be changed so that the society should meet monthly. Furthermore, that the succeeding place of meeting be announced at each meeting.

Program: Dr. Hugo Suma of St. Louis was present and read a paper, "The Diagnostic Value of the Floating Tenth Rib." An abundance of clinical material had been furnished by the society and Dr. Suma held a very interesting clinic. A paper was to have been read by Dr. H. C. Mitchell of Carbondale, entitled, "Medical Organization As an Aid to the Physician Both in His Duties to His Professional Brethren and to His Fellow Citizens."

The time being short, this was postponed until the next meeting.

Adjourned.

RAY B. ESSICK, Secretary-Treasurer.

McLEAN COUNTY.

At the May meeting of the McLean County Medical Society Dr. A. R. Freeman, ex-secretary, in the annual report showed sixty-seven members in good standing. Eight new members and fifteen suspended for non-payment of dues. Payment of same will reinstate these. The receipts for the year were \$265.76; the expenses, save secretary's salary, was \$213.86. The society is considered one of the largest and most prosperous in the state. Dr. E. P. Sloan exhibited a pathologic specimen from a recent gastroenterostomy. A committee consisting of Drs. Mammen, Bath and Dobson was appointed to confer with the city council to secure a sane July 4, if possible.

The essayist of the evening, Dr. Parkhurst of Danvers, gave an interesting paper on "Alcoholic Trance." Discussion by Drs. Cantrel, Taylor and Mammen.

MADISON COUNTY.

The Madison County Medical Society met June 3, 1910, in the club rooms of the opera house in Collinsville, Ill., President Dr. G. Taphorn in the chair. Members present: Drs. Taphorn, Siegel, Pfeifferberger, Oatman, Harrison, Luster, Burroughs, Schreifels, Tulley, Larrabee, Kerchner, Gwynn, Hastings, Braner, Oliver, Molden, Barnsbaek, Ferguson, Zoller, Treadgill, Wahl, Sims, Grayson, Robinson, Schroepel, Hirsch and Fiegenbaum. Visitors: Dr. Henry Schwartz, St. Louis; Dr. G. L. McKinney, New Douglas, and Dr. A. C. Armbruster, Collinsville. The minutes of the last meeting were read and approved. The applications of Dr. Robert G. Schaller, Alton; Dr. G. L. McKinney, New Douglas, and Dr. A. C.

Armbruster, Collinsville, were read and referred to the board of censors. The report on all was favorable and they were unanimously elected to membership.

A communication from our district councilor, Dr. Carl E. Black, upon the condition of medical organization in the state was referred to a committee consisting of Drs. Fiegenbaum, Pfeiffenberger and Tulley, with instructions to report at our next meeting. The invitation of Dr. W. H. C. Smith to hold a meeting at "Beverly Farm" was referred to the secretary, with instruction to arrange with Dr. Smith for a special social meeting.

A communication from State Secretary Dr. E. W. Weis in regard to our representation in the House of Delegates if both the regular delegate and alternate should be absent was referred to a committee consisting of Drs. Siegel, Robinson and Hastings, with instructions to report at our next meeting an amendment to the by-laws covering this point.

Our state delegate, Dr. J. M. Pfeiffenberger, then made an extended report of the meeting at Danville, calling special attention to noteworthy papers on the program. He also reported that nine of our members were present at the meeting. A vote of thanks was tendered to him for his attendance at that meeting, and for his very able and interesting report. On account of lack of time the president did not make his annual address, much to the disappointment of the members, but in a few well-chosen words introduced the next speaker.

Dr. Henry Schwarz of Washington University, St. Louis, then delivered a comprehensive lecture on "Emergencies in Obstetrics." It was highly instructive and fully appreciated and elicited quite a spirited discussion with numerous questions addressed to the speaker. The lecture was also illustrated by the exhibition of instruments and appliances used in emergencies. The speaker also furnished the members with some reprints on the subject under discussion and received a unanimous vote of thanks for his efforts in our behalf. A vote of thanks was tendered the local profession for their hospitable entertainment and appetizing lunch. On motion, adjourned to meet in regular session in Edwardsville, on the first Friday in September.

E. W. FIEGENBAUM, Secretary.

MERCER COUNTY.

The Mercer County Medical Society met in annual session in the Aledo Club Room at Aledo, May 3, 1910, at 10 a. m. The society was called to order by the president, Dr. G. H. Moore, of Joy. The morning session was public, by special invitation, urging citizens to participate by actively discussing the question of a national department of health.

Dr. M. G. Reynolds being present, was called on to read Senate bill 6049, which was introduced and read twice to the Sixty-first Congress, second session, by Hon. Robert L. Owen of Oklahoma and referred to the committee on public health and national quarantine.

The argument was opened by Dr. James Brown of William and Vasti College, Aledo, who made a forceful and impressive speech. After a general discussion, Dr. A. N. Mackey, Auxiliary Committee in the Legislative Committee of the American Medical Association spoke briefly pointing out that action should be taken on this important question. He made a motion that a vote be cast to ascertain the sentiments of those present. Unanimous approval was shown, all present casting a favorable vote. This was followed by an address on "Social Evil vs. Social Welfare," by Prof. A. H. Woodwarth of Williams and Vasti College, Aledo. As to the action of the council, on motion and second, questions 1, 2, 3, 4, 5 and 6 were taken up, represented and acted upon. A unanimous vote was cast favoring questions, 1, 2, 3, 4 and 6, opposing first section of No. 5, and favoring second section of No. 1. Moved and seconded that we are in sympathy with the campaign for better medical education which is being pursued by the Council on Medical Education of the A. M. A. Motion carried.

Officers elected for the ensuing year: President, J. A. Kleinsmid, Aledo; vice-president, F. D. Rathbun, New Windsor; secretary and treasurer, A. N. Mackey,

Aledo; censors, G. H. Moore, Joy; Matthew O'Haver, Millersburg; V. A. McClanahan, Viola; delegate to the State Society, A. N. Mackey; alternate, B. R. Winbigler, Seaton.

President's address on "Lack of Interest in the County Medical Society," by G. H. Moore was very instructive and beneficial to the Society. Dr. J. F. Percy, counselor, was present and addressed the Society on "Some of the Necessary Things in a Physician's Life," showing the importance of organization to protect the citizens and physicians and impressing forcefully the importance of safeguarding ourselves and upholding the standard of the doctor. He demonstrated that impostors in our ranks are slowly but surely reducing our present standing as a profession, and that we as a body must see to it that a better plan of education and licensing must prevail in our state.

MORGAN COUNTY.

After an informal dinner at the Dunlap House, Jacksonville, June 16, 1910, adjournment was taken to the library, where the evening was given over to reports from the recent state and national meetings.

Dr. E. L. Crouch, delegate to the state meeting, reported the proceedings of the House of Delegates. Drs. Black and Bowe also spoke concerning the Danville meeting.

Fifteen of the society's membership were registered at the American Medical Association meeting in St. Louis and previously arranged for reports from there were given by Dr. Josephine Milligan, on the section of preventive medicine; Dr. David Reid, on the puerperal eclampsia symposium; Dr. A. L. Adams, on the eye, ear, nose and throat, and the secretary, on the section of practice of medicine.

Dr. John Ulysses Day of Jacksonville was elected to membership. Adjournment, subject to the call of the president, was taken until September.

GEORGE STACY, M.D., Secretary.

WOODFORD COUNTY.

The Woodford County Medical Society met in annual session in the board of supervisors' room in the court house at Eureka May 3, 1910.

Those responding to roll call were as follows: Millard, Crawford, Henderson, Morrison, Higby, Briggs, Nichols. Guests present: Drs. Collins and Sidley of Peoria. Minutes of semi-annual meeting held in Minonk, Oct. 20, 1909, read and approved. Secretary-treasurer's report approved as read.

The society then proceeded to the election of officers for the ensuing year, as follows: President, Dr. W. S. Morrison of Minonk; vice-president, Dr. F. E. Briggs of Roanoke; secretary-treasurer, Dr. H. A. Millard of Minonk; censors, for three years, Dr. F. C. Nichols of El Paso; for the unexpired term of Dr. C. C. McMackin of Roanoke, who has removed from the county; Dr. C. B. Higby of Eureka; delegate to the state society for 1911, Dr. F. H. Henderson of El Paso; alternate, Dr. Joseph I. Knoblauch, of Metamora.

The society expressed itself as being unanimously in harmony with the council of the state society as regards medical education, state license and registration.

The scientific program was then taken up. Dr. Collins of Peoria read a paper on the "Technique of Abdominal Hysterectomy;" Dr. Sidley, a paper on "Surgical Interference in Intracranial Complications of Aural Suppuration." Both of these papers were very instructive and interesting, and were freely discussed and much enjoyed by the members of the society.

The semi-annual meeting will be held in El Paso the first Tuesday in October. The whole meeting and the entire day will be given to the reading of papers and discussions. Adjoining county societies, collectively or individually, are cordially invited to meet with us on this date. A general good time is assured to all.

There being no further business the society adjourned in regular order.

H. A. MILLARD, Secretary.

NEWS OF THE STATE

PERSONAL.

Dr. John H. Koch and wife, Quincy, have sailed for Germany.

Dr. Robert J. Burns, Freeport, has been appointed county physician.

Dr. Daniel F. Duggan, Alton, has been appointed township physician.

Dr. John R. Sutter, Jr., Edwardsville, has been appointed county physician.

Dr. George A. Dicus, Streator, was operated upon June 9, for appendicitis.

Dr. and Mrs. Sidney McCallin, Chicago, were seriously injured in an automobile accident, June 9.

Dr. Ralph M. Carter, Chicago, has been appointed on the staff of the Hinton Hospital, Hinton, W. Va.

Dr. Elbert J. Clark, Rockford, has succeeded the late Dr. George W. Rohr as district pension examiner.

Dr. Vaclav H. Podstata, former superintendent of the Elgin State Hospital, has returned from a trip to Europe.

Dr. George Stacy was recently selected as associate physician and pathologist of Maplewood Sanatorium, Jacksonville, Ill.

Dr. Thomas R. Foster, assistant physician at the Elgin State Hospital, has been appointed first assistant at the Watertown State Hospital.

Dr. P. S. Weidman, Edwardsville, said to be the oldest practitioner in Madison County, was seriously injured in a fall from his chair, June 2.

Drs. Oliver Hughes, Elmer Erickson, Isaac F. Freemmel, interns at Elgin State Hospital, have passed the examination for assistant physicians.

Dr. and Mrs. Emanuel J. Senn, Dr. and Mrs. Henry B. Thomas, Dr. and Mrs. Geo. S. Isham and Dr. S. C. Stanton, of Chicago, have sailed for Europe.

At a meeting of the trustees of Northwestern University Medical School it was decided to increase the requirement of preliminary collegiate education from one to two years.

Drs. Wm. L. Baum, and Charles L. Mix, Chicago, have been appointed members of the commission to take charge of the work of preparing plans for the rebuilding of Cook County Hospital.

The Chicago Medical Society elected the following officers: A. H. Ferguson, president; George F. Suker, re-elected secretary; Drs. H. F. Lewis, A. R. Corwin, Clyde D. Pence, Charles J. Whalen, and Adolph Gehrman were elected councilors at large.

Dr. E. L. Crouch, for several months resident physician and superintendent of Maplewood Sanatorium, Jacksonville, having acquired the interest of Dr. Frank P. Norbury in Maplewood, was recently elected medical superintendent and will have full management of the sanatorium.

Drs. J. B. Murphy, Frank Billings, A. D. Bevan, L. L. McArthur and M. L. Harris, Chicago, sailed on the *Mauretania*, June 21, for England, with several other members of the American Society of Clinical Surgery. The society will be entertained by the leading surgeons in England and Scotland with a series of clinics. Dr. Osler will also be their host at Oxford. Some members of the party will return on the *Lusitania* from Liverpool, July 9. Others will visit the continent.

NEWS ITEMS.

—At the annual commencement exercises of Northwestern University Medical School, May 31, a class of 150 was graduated.

—A campaign to raise funds for the City of Decatur and Macon County Hospital is under way. It is desired to raise \$150,000 for the building.

—The New St. Francis Hospital, Evanston, erected at a cost of \$150,000, was dedicated by Archbishop Quigley, May 28, with impressive ceremonies.

—The Rhodes Avenue Womans Hospital, Chicago, was the scene of an exciting fire, caused by lightning, June 4. Glass from the skylight fell into the operating room.

—It is reported that the trustees of Northwestern University Medical School have decided to increase the requirement of preliminary collegiate education from one to two years.

—At a meeting of the executive committee of the Chicago Winfield Tuberculosis Sanatorium, May 21, it was decided to reduce the directors from thirty-nine to seventeen members.

—The Mack A. Montgomery Memorial Sanatorium Association has been incorporated and bids have been received for a new building at Charleston. The capital stock is \$12,000 in \$10 shares.

—The new school being erected in the west part of Champaign is to be named the Howard School, in honor of the venerable Dr. Hartwell C. Howard, who has practiced medicine in that city for more than sixty years.

—Civil service examinations will be held throughout Illinois July 7, to secure assistant physicians in the insane hospitals and other state institutions. It is necessary to apply to the State Civil Service Commission, Springfield, before July 1.

—The grand jury, in a partial report submitted May 11, is said to have recommended that the license of Dr. Cora Emery Reed, a practicing physician, be revoked on account of unfit moral and physical conditions found to exist in the Rock Island Maternity Home.

—The removal of the ambulance and hospital service, Chicago, from the health department to the police department, was accomplished June 1, under the direction of Dr. George C. Hunt. Eleven ambulances and sixteen surgeons are connected with the service and headquarters will be in the office of the chief of police.

—The annual commencement exercises of the College of Physicians and Surgeons, the College of Medicine of the University of Illinois were held June 7, when the degree of doctor of medicine was conferred on a class of 131, including 7 Philippine students. President Edmund J. James, of the University of Illinois, delivered the doctorate address.

—Sister Mary Raphael, superintendent of Mercy Hospital, Chicago, for forty-one years, celebrated the fiftieth anniversary of her taking the vows, May 30. Dr. John H. Hollister, the only surviving member of the original staff of Mercy Hospital, Dr. John B. Murphy, and President A. W. Harris, of Northwestern University, were the principal speakers.

—In the case of Dr. Benjamin A. Arnold, Freeport, charged with making an attack on a young girl, on whom he had operated for appendicitis, and in which the jury rendered a verdict of guilty, in April, the defendant is said to have been sentenced, May 27, to imprisonment for four years in the penitentiary. An appeal is to be taken to the supreme court.

—Ground near the Michael Reese Hospital is being prepared for the Nelson Morris Institute of Medical Research Building. Mrs. Morris donated \$250,000 for an institution similar to the Rockefeller Institute in New York, shortly before her death last August. Mrs. Morris also left \$300,000 for the erection of a children's hospital but plans for this have not been completed.

—The Alumnae Association of the Northwestern University Woman's Medical School held its annual meeting June 14. The following officers were elected: President, Dr. Eliza H. Root; vice-presidents, Drs. Annette S. Mack and Nora Soule, Davenport; secretary, Dr. Anna Ross Laphan; treasurer, Dr. Mary C. Hollister, and trustees, Drs. Rachel Hicky Carr, Rose Willard, and Louise Acres.

—The class of 1899, of Rush Medical College, held its annual reunion and dinner at the Bismarck Garden, Chicago, on the night of June 16. Covers were laid for fifteen. The following officers were elected: President, Dr. Wm. D. Byrne, Chicago; vice-president, Dr. Thomas R. Thomas, Lima, Ohio; secretary-treasurer, Dr. John B. Ellis, Chicago, and historian, Dr. Benjamin H. Breakstone, Chicago.

—The Chicago Winfield Tuberculosis Sanatorium elected the following officers for the year: President, Charles A. Stonehill; vice-president, Mrs. M. L. Rothschild; second vice-president, Mrs. Emma B. Mandel; financial secretary, Max Lindauer; recording secretary, Mrs. B. M. Engelhard; treasurer, David M. Pfaelzer. It was announced that the contract had been let for the new building for women. This will contain twenty beds and was made possible by Mrs. Emanuel Mandel contributing \$6,000.

—The Phipps Institute has selected the University of Pennsylvania to carry on its work. A hospital will be erected and the work will be divided into three general departments: laboratories, to be presided over by Dr. Paul Lewis; the sociological department, by Alexander M. Wilson, of the Boston Association, and clinical department, by Dr. H. R. M. Landis; these to be accountable to the trustees of the university. There will be also an advisory council of prominent men from this part of

the country; Dr. Henry B. Favill and Dr. Gideon Wells, of Chicago, will represent the West.

—Dr. Alexander C. Chittick, whose license to practice medicine is said to have been revoked by the State Board of Health, May 24, for unprofessional conduct in connection with the sale of diplomas from the Chicago Medical University, and who was indicted by the grand jury, June 2, is said to have agreed to plead guilty to the use of the mails to defraud, provided a two months sentence was imposed. Judge Landis sentenced him to serve two months in the county jail. In the case of Norbert O. Bourque, a graduate of the National University, charged with a similar offence, action was deferred by the State Board of Health, pending the obtaining of further evidence. This individual is said to have signed one diploma but alleges that he did not know what he was doing.

—By the bequest of Dr. Byron Robinson, a graduate of the University of Wisconsin, in the class of '78, who died last March, the university receives a large collection of books and pamphlets on anatomy, supplementing the gift of over a thousand volumes on the history of medicine made by Dr. Robinson shortly before his death. The collection is to be known as the Robinson-Waite Library, in honor of the donor and his wife, of Dr. Lucy Waite. The whole collection, amounting to over 1,500 volumes and valued at over \$4,000, gives the university the most complete library on anatomy and the history of medicine of any state institution, and one of the best in any medical school in the country. Dr. Robinson's library is unusually rich in early American medical treatises and old anatomical plates, including many fine copperplates of the best European scientific artists. Funds for the establishment of a scholarship in anatomy in the University of Wisconsin Medical School, valued at \$550 a year, are also provided in the bequest. This will be known as the Byron Robinson scholarship in anatomy, and is to be held by both men and women students in medicine. The purpose of this scholarship is to encourage the anatomical, physiologic and pathologic study of the sympathetic nervous system. Dr. Robinson was a native of Wisconsin, having been born in Hollandale in 1855. He was a graduate of the University of Wisconsin in 1878, and of Rush Medical College in 1882. He practiced in Grand Rapids, Wis., for some years, and then, after studying abroad, located in Chicago, where he won recognition as an authority on abdominal anatomy.

PUBLIC HEALTH.

—An epidemic of measles broke up a commencement party to be given by the graduating class of Streator high school.

—Open air schools for vacation work will be installed in tents near public school buildings in the river wards. The Tuberculosis Institute has offered to look after the medical side of the work while the school extension committee will raise funds for the transportation of the children and for food. Milk and eggs will be provided in abundance, besides one or two cooked meals a day.

—Frank E. Wing, superintendent of the Chicago Tuberculosis Institution, reports that Illinois is not keeping abreast of the times in educational machinery for combating the spread of tuberculosis; that while nearly 400 local societies have been organized in the United States only two have been organized in Illinois in the past two or three years, and that there are less than half a dozen in the state altogether.

—The BULLETIN of the Chicago Department of Health is running a series of short articles on the care and feeding of infants, which would do lots of good if they were read and the advice were followed by the mothers. The circular on the care of children in hot weather, written by the late Dr. F. W. Reilly, is sent by the department to every mother reporting a child born. The circulars are now furnished in nine languages.

—The Sane Fourth Association, Chicago inaugurated the modern way of celebrating the Nation's birthday by suppressing all dangerous fireworks and by providing a great pageant, with a parade on the Fourth and a series of military tournaments, from July 4 to 14 on the lake front, under the management of Gen. F. D. Grant. An amphitheater seating 40,000 and an encampment of several thousand troops of all arms made this the greatest military spectacle since the war.

—The United Charities of Chicago, formed by the union of the Chicago Relief and Aid Society and the Chicago Bureau of Charities, completed a year April 16 last. Their annual report shows an expenditure of \$195,622.

Realizing the need of united work by all cooperative forces in reducing the number of deaths of babies—especially in the congested districts during the summer—the society called a meeting at which a plan was outlined and a committee on infant welfare, with Health Commissioner Evans as chairman, was created.

Contributions from individuals, women's clubs, and other organizations were made to employ nurses and assist in other ways.

During the campaign the nurses and visitors made over 25,000 calls and found 2,857 families in which sick children were given special attention. The campaign reduced the deaths of children from diarrheal diseases for the year 1909 to 165 per 100,000 population—the lowest ever recorded in Chicago.

The most important benefit, perhaps, of the campaign, the report says, was the extensive educational work done by the nurses and doctors in the homes with the mothers for, as one authority points out, after all is done, it is the mother that must save the baby. The campaign brought home to the community the immense importance of protecting the health of the infant and points the obligation to a more extensive and sustained educational propaganda among all classes of our people.

—Michigan may be all right for vacation if you happen to strike the good spots, but what's the matter with Chicago? This is the way the *Bulletin* sets forth its claims:

Why go away for a vacation? You will be cooler and more comfortable, as well as safer, right here in Chicago than anywhere you may go.

Here, when you go home, you can strip down to very few clothes and take life easy—at a resort you must dress more.

Here, you have home comforts—away, your room will be far less comfortable.

Here, the water is good, the milk is controlled and flies are few—away, the chances are that the water will be polluted, the milk dangerous and flies everywhere.

Here, you have the cool parks—away, you will have dusty country roads.

Here, you can get an evening ride, cooling and refreshing, by paying ten cents car fare—away, you pay five dollars for an automobile, ride over dusty roads and then spend an hour getting the dirt out of your hair, eyes, mouth and nose.

But, if you don't want to take the greater comforts of home and are bent on something different, then choose a place that will be good for you.

Don't locate until you know that the water is good—not necessarily sweet, but wholesome.

If there has ever been typhoid fever in the place, make them prove that things are different now.

Don't stay in a fly-ridden place—flies mean filth. The parlor may be very clean, but if there are flies around you may be sure there is filth in the kitchen, in the hogpen, the dairy, the privy, or somewhere thereabouts. This is certain. You cannot see germs, but you can see flies, and the significance of the one is much the same as the other.

Don't swim in dirty water. Many of the resort places have bathing water which does not analyze as clean as the main stream of the Chicago river.

There are some resort towns with good water, good sewerage, good garbage collection—encourage them. There are other towns which do not make life safe—avoid them.

There are resort hotels and farm houses which are clean, wholesome and safe—patronize them. There are others not much safer or cleaner than pigpens—keep away from them and keep your friends away from them.

We trust our people will remain in the city over the coming Fourth of July. Chicago will probably be the safest and sanest place in the country on that date. Most everywhere else there will be shooting of large crackers and other explosives. Such places, by comparison, will be dangerous, hot and uncomfortable.

The water of Chicago is safer than in other cities and resorts in this vicinity. The milk is much the safest. There are fewer flies. Lake Michigan, at Chicago, will be as good a place for swimming as there is around here. For these reasons stay in town. In addition to these, there is to be a Chicago Fourth of July, such as has never been heard of before.

On the morning of July 4 locate on Michigan Avenue or State Street and see the pageant. You will learn something about American history. See the German floats and the German societies in costume. See the Irish floats, the Lithuanian, the Polish, the Italian, etc. Maybe you have not been as proud of these people from across the water as you should have been. Maybe we have not been so patient with them as we should have been. Let us go to see the pageant on July 4th. We will be better citizens for it.

After the pageant, in the forenoon, there will be afternoon gatherings in the parks, with folk play, folk song, folk dance and folk lore.

Will not our neighbors come to town for the day and bring the children along? It will be safe for them and they will learn much.

REMOVALS.

Dr. G. E. Pumphry, of Ferris, has moved to Carthage.

Dr. C. C. McMackin has removed from Roanoke to Wyoming.

Dr. Nellie Baker has removed from Urbana to Pullman, Wash.

Dr. F. H. Powers, of Champaign, has moved to Delavan, Wis.

Dr. R. B. Blood has removed from Chicago to Hebron, Indiana.

W. O. Shellar, M.D., has removed from Big Rock, to Wylie, Col.

Dr. H. W. Braun has removed from Mounds to Greenfield, Ohio.

Dr. Joseph Hausen, of Chicago, has removed to Kansas City, Mo.

Dr. E. W. Gardner, of Hamilton, has removed to Fort Morgan, Col.

Dr. THEO. M. MOLL has removed from Alhambra to Cedar River, Mich.

Dr. H. N. Barth has removed to 1235 Wellington Avenue, Chicago, from Rockford.

Dr. and Mrs. A. E. Mowry and daughter Marion, 3505 Indiana Avenue, Chicago, sailed June 30 from Montreal, for a two months' sojourn on the continent.

INCORPORATIONS.

—Contracts have been let for a new \$40,000 hospital at Monmouth.

—American Home Treatment Company, Chicago; capital, \$1,000; drug and mercantile business and to maintain a sanitarium; incorporators: Louen V. Atkins, Charles B. Bailey, J. Scott Matthews.

MARRIAGES.

W. R. GRANT, M.D., of Easton, to Miss Clara England, of Cantrall.

HOMER B. CATRON, M.D., Hanford, to Miss Edna Earle Price, of Belle Rive, June 1.

WILBER ELMER POST, M.D., Chicago, to Miss Louise C. Morrison, of Springfield, June 1.

J. FRED MCBRIDE, M.D., Coleta, to Miss Elizabeth Buchborn, of Philadelphia, May 25.

BERNARD J. LACHNER, M.D., Rock Island, to Miss Anna Elizabeth Kelley, of Philadelphia, June 1.

WILLIAM THOMAS TREWYN, M.D., Peoria, to Miss Gertrude Cross, of Marshalltown, Iowa, at Chicago, June 2.

The marriage of Dr. William MacKee Crosier to Miss Louise Laferty took place June 8, 1910, in Chicago. They will reside in Alexis.

DEATHS.

GEORGE B. CROMWELL, Missouri Medical College, St. Louis, 1876; died at his home in Nebo, March 22, from pneumonia, aged 57.

CHARLES ROWLEY ENOS, M.D., Homeopathic Medical College, St. Louis, 1874; died at his home in Jerseyville, May 12, from senile pneumonia, aged 95.

GEORGE HUGH BACON, M.D., University Medical College of Missouri, Kansas City, 1892; of Carthage, N. M.; died at the home of his mother in Jonesboro, May 7, aged 45.

JOHN G. STRICKETT (license, years of practice, Ill., 1880); a practitioner for 52 years, and a veteran of the Civil War; died at his home in Springfield, May 8, from senile debility, aged 83.

JOSEPH SOLOMON MORTON, M.D., Rush Medical College, Chicago, 1887; a member of American Medical Association; died while fishing near his home in Vernon, May 18, from angina pectoris, aged 46.

WILLIAM STEWART DOWNEY, M.D., Victoria College, Toronto, 1865; Bellevue Hospital Medical College, 1865; a member of the American Medical Association; died at his home in Chicago, June 1, from heart disease, aged 70.

ALEXANDER C. SMITH, M.D., Long Island College Hospital, Brooklyn, 1874; a member of the American Medical Association; president of the pension board of Sterling; died at his home in that city, May 27, from heart disease, aged 69.

JOHN M. PISCHCZAK, M.D., University of Lemberg, Galicia, Austria, 1862; a member of the American Medical Association; at one time professor of pharmacy in the University of Austria; for two terms president of the Polish Medical Society; died at his home in Chicago, June 1, from angina pectoris, aged 72.

MONROE GRIFFITH REYNOLDS, M.D., Rush Medical College, 1880; of Aledo; a member of the Illinois State Medical Society; and formerly president of the Mercer County Medical Association; representative in the Illinois General Assembly in 1904-1906, and mayor of Aledo from 1899-1901; died suddenly on his farm near Redwood Falls, Minn., May 13, aged 64.

F. GURNEY STUBBS, M.D., Northwestern University Medical School, 1893; a member of the American Medical Association, Chicago Laryngological and Rhinological Society, and Physicians Club, of Chicago; assistant professor of laryngology and otology in Rush Medical College; professor of laryngology, rhinology and otology in the Chicago Eye, Ear, Nose and Throat College; died in St. Lukes Hospital, May 26, from pneumonia, aged 41.

Book Notice.

PULMONARY TUBERCULOSIS AND ITS COMPLICATIONS. Pulmonary Tuberculosis and its Treatment, with Special Reference to Diagnosis. By Sherman G. Bonney, M.D., Professor of Medicine, Denver and Gross College of Medicine, Denver. Second edition thoroughly revised, with 243 original illustrations, including 31 in colors and 73 x-ray photographs. W. B. Saunders Company, Philadelphia and London, 1910. Price, \$7.00.

This complete work when it first appeared was accorded a very favorable reception, which should be continued to the second edition. The effort has been to make the present volume as complete, modern and practical as possible. Dr. Bonney has been for years located in Denver, and enjoys the privilege of seeing a large number of cases of tuberculosis, in all its forms and seems to have profited by his experience. We are pleased to note that notwithstanding a wise conservatism regarding the use of tuberculin, Dr. Bonney states that the results of tuberculin treatment were surprisingly satisfactory in a number of cases. Taken all in all the book must be considered a very valuable guide in treatment of this multiform disease.

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ORIGINAL ARTICLES

PELLAGRA, WITH SPECIAL REFERENCE TO ETIOLOGY AND DIAGNOSIS.*

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Because of its economic importance, its unknown cause and rapidly increasing prevalence in our own country and especially in our state, pellagra is a disease of more than passing interest and importance.

Economic.—Last year¹ corn constituted the greatest crop of the civilized world—3,250,000,000 bushels—2,500,000,000 being produced in the United States, being worth almost as much as the great crops of hay, cotton and wheat combined, and of this amount Illinois shipped 131,363,000 bushels. As Mr. Wilson said, this wealth, taken out of the soil of the United States in four months and amounting in value to over a billion and a half of dollars, is enough to cancel the interest-bearing debt of the United States, pay for the Panama Canal and build fifty battleships.

Historical.—Pellagra² was probably first observed and correctly described by a Spanish physician, Gaspar Casal, in 1735, and his observations were published in 1762 by Joseph Garcia after Casal's death. The name pellagra is said to have been given the disease by Frapoli, of Milan, in 1771. The literature shows that the disease spread from Spain to France, thence to Italy, Egypt, thence to other parts of Africa, Austria, Servia, Bulgaria, Roumania, Asia Minor, India, Mexico, Barbadoes, and thence to North and South America.

Dr. Lavinder says³ there seems little doubt that pellagra has existed in the Southern States for many years—twenty-five or thirty at least—

* Read at the Sixtieth Annual Meeting of the Illinois State Medical Society, held at Danville, May 17-19, 1910.

1. Watson, E. J., Commissioner Department of Agriculture, Commerce and Industries, Columbia, S. C.; Report of South Carolina State Board of Health, p. 147.

2. Hyde: Pellagra and its Problems, p. 2.

3. The Prevalence of Pellagra in the United States, 1909, p. 6.

and has been regarded as unusual manifestations of tuberculosis, syphilis, malaria, acute delirium, hookworm, dermatitis exfoliativa, cezema, etc.

Two cases of probable pellagra were reported forty-five years ago by Dr. Gray, of Utica, New York, and Dr. Tyler, of Somerville, Mass. Then a case was reported by Dr. H. F. Harris, of Georgia, and one by Dr. S. Sherwell. The first cases in Alabama were reported in 1907. In 1908 Dr. Lavinder reported cases at Wilmington, N. C. In July, 1909, Dr. Lavinder found cases at Nashville, Tenn., and three at Dunning, Ill., these being the first cases reported in this country except in the South.

Prevalence.—In 1909 Drs. Lavinder, Williams and Babeock estimated that there were approximately 1,200 cases scattered throughout thirteen different states. Of these there were 130 well recognized cases at Peoria, with 100 other probable cases. Dr. Hyde says that Dr. Kerr estimates there were 5,000 pellagrins in the United States in 1909. Hyde says that the prevalence of the disease in Europe may be estimated to some extent by its ravages in Italy, which seems to have suffered to a larger extent than any other country. For example, in Lombardy alone from the year 1770 to 1880, the number of pellagrins increased from 20,000 to 104,067, this being one in nineteen of the inhabitants. Sandwith estimates that over 36 per cent. of the Egyptian peasantry are affected. In some districts he says it is as low as 15 per cent. and in others as high as 62 per cent., where it is very common among the children, many cases occurring between the ages of 10 and 15 years.

Corn and Pellagra.—Just when corn as an article of diet began to be associated with pellagra in the relationship of cause and effect is not definitely known. Casal seems to have had some idea of it, and in 1810 Marzari definitely stated that Indian corn was the cause of the disease. When this idea was overthrown, Ballardini advanced the idea of *spoiled* corn as the cause. Lombroso developed this idea broadly, and the adherents of the idea of spoiled corn as a cause are known as Zeists, while those who deny this relationship, notably the French school, are known as anti-Zeists. The Zeistic school has a number of factions or classes, each representing a modification of the maize theory. The first two of these seem to have been rather effectually discredited; they are, briefly, that corn is wanting in proper nutritive value, and that sound corn contains certain toxic substances which cause pellagra. The third is the toxico-infective theory that from spoiled corn certain toxic substances are *formed within the body*.

The fourth is the toxico-chemical idea that under the influence of parasitic growths, bacteria or molds, corn may undergo certain changes with the formation of one or more chemical toxins, and this is doubtless the most popular of all the phases of the maize theory.

The fifth theory is that pellagra is a specific infection derived from corn, either a mold or a bacterium, and many parasites have been named by Ballardini, Pari, Carraroli, Ceni, and Tizzoni.

Lastly, there is the interesting theory of Sambon, based largely on analogical arguments, that pellagra might be due to some protozoon, a theory which has been heartily approved by Manson. Aside from corn as

an etiologic factor, it seems to be established that the actinic rays of the sun have some possibly remote bearing on the etiology, but a distant bearing upon the characteristic cutaneous manifestations of a paroxysmal or seasonal nature. Its association with poverty has always been noted, and the influence of contaminated drinking water, capable of causing intestinal lesions which may open up avenues of infection, has been pointed out. The influence of poverty, unsanitary surroundings, depressing diseases, alcoholism, malaria, hookworm, and other intestinal parasites, and everything which lowers vitality and lessens resistance is equally well known.

Sandwith says:

It is not good maize or good maize flour which produces pellagra—the disease requires for its production the habitual use of damaged maize in some form. . . . There is now a considerable consensus of opinion in favor of incriminating *penicillium glaucum* in ordinary pellagra. In districts where no maize is cultivated or habitually eaten, pellagra does not exist. . . . The maize area is infinitely larger than the pellagra area. This is not the point. The question is, does the pellagra distribution correspond very nearly with the areas upon which human beings live who eat damaged maize or products from damaged maize?

J. W. Kerr, Assistant Surgeon General, U. S. Public Health and Marine Hospital Service, says:⁴

The belief that there is some relation between pellagra and the use of corn would seem too universal and too profound to permit of rejection except in the case of demonstrative proof to the contrary. The exact nature of the relation awaits final solution.

Dr. R. G. White shows⁵ that patients in the Serum Institute on the hospital diet would show improvement, but when they were fed the durra bread prepared from corn meal by the native women in the usual way, they would show rapid and marked changes, apparently in the nature of a toxemia, with a return of diarrhea, loss in weight, dull, listless appearance, with clay color of skin but no return of the rash. White concludes his article by saying:

Judging from the work so far done, one feels justified in saying that at least damaged maize, as found in some of the villages, and presumably used as food purposes by the poorer fellaheen, seems to cause a condition of the nature of toxemia. Whether it is due to some poison elaborated by a fungous growth in the durra grain or to the fungus itself, only further research can decide.

One of the most interesting papers I have studied in this connection is that of Dr. George F. Gaumer, of Yucatan.⁶ He relates that while isolated cases may possibly have existed in Yucatan at an earlier date, it became epidemic in 1884. In 1882 the grasshoppers destroyed all cultivated plants and were especially destructive of the corn. Corn is the only cereal used in Yucatan for the making of bread, and famine seemed inevitable until the merchants began to import corn from the United States. The imported corn was brought from New York in the bottoms of vessels as ballast; during the voyage it often became damp and some-

4. Report of South Carolina State Board of Health, 1909.

5. Pellagra in Egypt; *Ibid.*, 1909.

6. Gaumer, George F.: Pellagra in Yucatan, Report of South Carolina State Board of Health, 1909.

times wet, and from careless handling, bad storage, with the heat and humidity, a peculiar fungus developed which he calls *sporisorium maidis*, and that "the constant eating of corn affected with this fungus produces a vitiated state of blood which leads to the slow development of pellagra."

This spoiled corn was consumed chiefly by the middle and lower classes, and they suffered most from the disease; while among the better classes who were able to buy up all the corn produced at home, the disease seldom made its appearance.

This importation of corn continued until 1891, when the country had recovered from the devastation of the grasshoppers and locusts. From 1891 to 1901 no more corn was imported, enough being produced in the states for home consumption. *During this period no new cases of pellagra developed*, while the old cases ran their course, and all died. From 1901 to 1907 the corn crop of Yucatan was almost a total failure, and again corn was imported from the United States, now coming chiefly from New Orleans and Mobile, some coming about the same distance from Mexico, coming by water. At this time the prices paid for hemp were very high and consequently it was more profitable to raise hemp than corn even for home consumption, thus compelling even the well-to-do to use the imported article. Pellagra again spread rapidly among both rich and poor, so that in six years about 10 per cent. of all the inhabitants became victims of the disease, and at the present time fully 8 per cent. of all the people of Yucatan have pellagra.

Dr. J. F. Siler, Captain Medical Corps, U. S. Army, says, concerning the etiology:⁷

A study of the literature of pellagra reveals the fact that not only is the etiology an unknown quantity, but the clinical picture of the disease is a most variable and changeable one.

Dr. C. W. G. Rohrer, Medical Assistant to the State Board of Health of Maryland, says:⁸

Today it is pretty generally conceded that pellagra is caused by the *aspergillus fumigatus*. Some of the fall cases may be due to the *aspergillus flavescens*.

Dr. Rohrer also calls attention to what I think is of very great importance, a hitherto overlooked factor in the causation of pellagra, the harvesting of corn by machinery. During the hot weather, and before the corn is fully ripe, the corn is cut and bound into tight bundles by the corn harvester, and often lies for days on the damp ground, and these conditions he says favor the growth of the *aspergillus fumigatus*.

Dr. D. J. Williams, Medical Superintendent of the Asylum, Kingston, Jamaica, says:⁹

I excluded corn meal in every form from the inmates' diet for twelve months, but as I found that the cases admitted to our wards after the exclusion of the corn meal from the diet suffered from the disease, I am not prepared to admit that maize or Indian corn is the only cause of this condition, *in fact, I wish to record my opinion that Indian corn, damaged or otherwise, is not the sole cause of pellagra.*

7. Report South Carolina State Board of Health.

8. Ibid, 1909.

9. Ibid, p. 230.

Dr. J. W. Moberly¹⁰ gives it as his opinion that:

The cause of pellagra will probably be found in both general and specific factors. To just what extent, if at all, they operate together, I am unable to say. The various clinical aspects of the disease, however, would justify us in considering its etiology under several headings.

He discusses Lombroso's theory that a fungus growing upon corn produces a toxin which is the cause of the disease, points out the fact that the specific fungus which grows upon corn will also grow upon cheese, and cites Brown and Low's case occurring in a shop woman from the eating of raw oatmeal and rice. He then goes on to discuss the question of the toxin of a specific organism operating only in the presence of a peculiar morbid predisposition or racial peculiarity, and also says:

Considering the fact that pellagra is a chronic progressive disease, considering the fact of its frequent association with syphilis and tuberculosis; and considering the relationship of syphilis to certain chronic nervous diseases, as paresis and tabes, are we not justified in suspecting the existence of a morbid and etiologic equivalent in the three conditions?

He also considers intestinal parasites as contributing causes.

Dr. J. M. King, of Nashville, Tenn., reported to the National Pellagra Conference at Columbia, South Carolina, in 1909, cases in which he thinks there was evidence of a probable direct transmission of the disease to a woman from washing clothes of a pellagrous patient. This opinion was also expressed by Dr. W. E. Hibbitt, of Nashville, in the discussion of Dr. King's paper.

Dr. Walter H. Buhlig¹¹ gives a brief report of his studies of the Gram stains of the feces of 20 pellagrins at the laboratory of the Illinois State Board of Health at Peoria, and reports the almost universal presence of the *bacillus bifidus*, pointing out the difficulty of interpreting the exact significance of this finding and calling attention to Kendall's observation concerning the tendency to increase in this organism where the diet is poor in protein and rich in easily fermentable carbohydrates such as obtains among the pellagrins at the hospital at Peoria.

Dr. J. H. Taylor favors the protozoal theory, and points out¹² the analogies between pellagra, syphilis and sleeping sickness, as to type, remissions, similarity in skin lesions and lesions of the central nervous system, pathology and treatment, but admits that there is "some intangible relationship between corn, especially spoiled corn, and the development of the disease."

Dr. J. W. Moberly's suggestion of an etiologic equivalent in pellagra and syphilis, is met by the statement of Dr. Howard Fox, of New York,¹³ who has reported the results of the Wassermann test in thirty cases and gives it as his opinion that "Cases of pellagra do not often give a positive Wassermann reaction," and, "reaction when present, is generally

10. *Ibid.*, p. 260.

11. October, 1909, Bulletin of the Illinois State Board of Health, and March, 1910, Bulletin of the Medical Department of Northwestern University.

12. Report South Carolina State Board of Health, 1909, p. 309.

13. *Ibid.*, p. 275.

weak, and the value of the Wassermann test is not affected by the findings in pellagra."

Objections to Lombroso's Zeiloxic theory.—Ferni holds that in Egypt pellagra is not related to the use of moldy corn. Ceni describes pellagra among people who eat no corn. In Lombroso's experiment upon twelve human beings fed with corn spoiled by *penicillium glaucum*, there were absolutely no symmetrical skin lesions nor the slightest tendency to periodicity, both regarded strikingly characteristic phenomena. The cultivation and extensive use of corn in Italy antedates the appearance of pellagra by nearly two hundred years. There are extensive regions to-day where pellagra is widespread, but where corn is neither grown nor eaten. J. H. Taylor cites the province of Vodjoz, Spain, where pellagra is endemic, though the inhabitants eat no maize; and also the province of Ovido once ravaged by pellagra, but in 1900 it suffered least, though no changes had taken place in the culture, storage, preparation, or quantity of corn eaten, while Madrid, where it is only seldom used as food, suffered severely.

Williams, already quoted, excluded corn meal and every form of corn from the diet of the inmates of the asylum at Kingston, Jamaica, for twelve months, but found the cases admitted to the wards suffered from the disease.

In 1903 Garbini identified several cases of undoubted pellagra at Messina Asylum, in natives of Sicily, where maize is not cultivated, and where they had been inmates of the institution for a long time and had eaten no maize for years prior to the appearance of erythema.

Why should there be 20,000 cases among the five millions of Roumanian peasants and a few hundred only among the 80,000,000 of the United States, and these only within a very few years?

Taylor states scarcely 25 per cent. of the cases of Lombroso and Babes and Sion can be shown to be in the habit of eating spoiled corn.

In August, 1909, after pellagra was definitely diagnosed at Peoria, Dr. Walter H. Buhlig, of Northwestern University, made a careful study of the cases at Peoria, under the auspices of the Illinois State Board of Health, these investigations having to do especially with the etiology of the disease. He made a special study of the blood, urine, feces, the bacteriology of the stomatitis, and bacteriologic analyses of the drinking water, cultures of the corn, and study of the dietary.¹⁴ He concludes that the urine is not diagnostic, but corresponds to what one would expect in this class of cases; that the anemia is secondary; that in practically all the cases where direct smears are made, the spirochetes and spindle-shaped bacilli so common to ulcerative conditions in the mouth and throat were discovered, and that they are probably secondary to the actual causative agent of the ulcerations. An interesting fact was noted, namely, that many bacilli of the colon type were seen. Amebæ and flagellates found in the water he believes to be non-pathogenic, because of absence of dysentery among the inmates, the absence of liver abscess and the finding of the same organisms in other places where there was no

14. Bulletin Illinois State Board of Health, October, 1909.

sickness, and the further fact that amebæ never produce the symptoms of pellagra.

In the examination of the feces a large sluggishly motile gram positive bacillus was found in great abundance, and animal experiments have been started with it. This same organism was obtained from cultures of moldy No. 3 corn. Cultures from the hominy and the mush of the institution were sterile.

Captains J. F. Siler and H. J. Nichols, of the United States Army, charted and carefully investigated 100 cases at the Peoria Hospital and their report is published in the October, 1909, Bulletin of the Illinois State Board of Health. I include only the summary of that report, which is as follows:

1. Of 2,150 inmates at the Peoria institution, the majority of whom have been almshouse and asylum inmates for many years, 175 were pellagrous during the summer of 1909. No physicians, attendants or employees were affected.

2. About 70 per cent. of cases had suffered from previous attacks and pellagra has been prevalent at least four years.

3. The average age of cases was 50 years; the sex distribution was about equal.

4. Attacks were mild (skin symptoms, mild digestive tract symptoms without constitutional reaction) and severe (marked skin and digestive tract symptoms with pronounced toxemia).

5. A diagnosis of pellagra is not warranted in absence of skin symptoms. The symmetry of skin lesions was a most striking feature. When blood formation occurred the death rate was high.

6. Digestive tract symptoms were not present in all cases. In some cases diarrhea and stomatitis could be attributed to bad teeth and infection with amebæ and flagellates, but in other cases, the constitutional symptoms pointed to some additional specific poison.

7. Patellar and plantar reflexes were abnormal in about three-fourths of the cases, usually increased.

8. It was impossible to determine the exact extent of mental disturbance attributable to pellagra, as all patients were insane before the disease was recognized. The case develops no suicidal tendencies.

9. Mild case recovered without therapeutic aid. Severe cases were not much benefited by Fowler's solution, atoxyl or thyroid tablets.

10. Feces; 84.8 per cent. of the cases showed protozoal infection (amebæ, flagellate and encysted forms). These protozoal infections account in part for the intestinal symptoms and are believed to be a predisposing factor.

11. In 18 autopsies, well marked ulcerations of the colon were found in 12 cases, and folliculitis occurred in all. No other organ showed any constant or striking alteration.

12. Cultures of blood, spinal fluid and of spleen pulp were uniformly negative.

13. The disease impressed us as an intoxication rather than an infection.

14. Not more than two ounces of corn were eaten per day; no evidence was obtained of the use of spoiled corn.

15. The possibility of an intoxication from bacterial action on corn products in a damaged intestine is considered the most promising field for study.

To add other opinions and quote other authors would add to the confusion and increase the differences of opinion. It must be frankly admitted that the cause of pellagra is unknown. On the other hand, there seems to be some relationship between spoiled corn and the disease, and the question of the modern method of harvesting the corn before fully ripe seems to be an important and practical one.

Diagnosis Symptoms.—At the outset, it might be well to recall that the epidermis and the epidermic tissues, the mucous membrane of the mouth and also the nervous system, are all epiblastic in origin.

The symptoms of pellagra are in a general way the expression of morbid conditions in one or all of these systems, and there seems to be a close relationship and interchangeability of symptoms between the skin and the mucous membranes and it is quite possible the histogenesis of these tissues may offer an explanation of this triad of symptoms, the etiologic factor having a special predilection for epiblastic structures.

Dr. J. W. Babcock, of Columbia, S. C., emphasizes the fact¹⁵ that in the London School of Tropical Medicine, the students are taught that they must make a diagnosis of pellagra regardless of dermatitis, that they must make a diagnosis without waiting for the skin manifestations to develop; in other words, to make a diagnosis before the skin lesions develop, as it is in this stage of disease that we are able to be of greatest benefit to the patient. When the case reaches the asylum stage, with marked dermal changes, especially if they occur without solar influences, the curable stage has probably long since passed. The early changes are marked diarrhea, mental symptoms, exaggerated knee jerk, but without skin manifestations.

Capt. H. J. Nichols, U. S. Army, thinks that:

For scientific purposes in the study of our cases, we ought to eliminate those which do not show skin symptoms. It may occasionally be necessary to diagnose pellagra without skin symptoms, but it is not safe at this stage of our knowledge of this disease.

Speaking on this point, Hyde says:

The cutaneous symptoms have not only given to pellagra its most commonly employed designation, but further, have furnished its most constant and determinate feature. It is possible that there may be a *pellagra sine pellagra*, but few clinicians would venture to make a diagnosis of this sort in any sporadic case beyond the limits of a pellagrous district.

Prodromal Symptoms.—When it is recalled that the cause is unknown, that it is probably always a chronic disease, frequently having associated with it the pathologic changes incident to other diseases, and because there are no published accounts of thorough, complete post-mortem examinations of uncomplicated cases, in the early stages, especially the microscopic changes in the central nervous system as revealed by modern methods, and that even the initial symptoms of the typical cases are not matters of agreement among observers, it is apparent that the question of prodromal symptoms is a difficult one to solve.

McConnell says¹⁶ that "the slower developing cases usually present the symptoms of salivation, burning in the stomach and diarrhea twelve months before the rash appears."

Harris says¹⁷ that he "has no hesitation in predicting the future will show that the initial changes are in the central nervous system," and if

15. Report South Carolina State Board of Health, 1909, p. 270.

16. Ibid, p. 325.

17. Ibid.

this is correct, then the prodromal symptoms would be manifestations of the action of the poison upon this system.

Dr. Lavinder says:¹⁸

The prodromal stage of pellagra is seldom noticed; it is often passed over by the patient, because the symptoms are not severe and because it occurs among a class of people who do not complain; it is usually vague, but may be marked, and may last many months. It is characterized by lassitude, headache, some pain in the stomach, digestive disturbances, perhaps a little muscular weakness, and these may continue for some time. They may continue an indefinite time, say a month or two, or a year or two.

On this point Hyde says.¹⁹

The question of a distinct prodromal period introduces at once to the confusion which has prevailed respecting many features of the disorder. By some it is believed that year after year, before the first unmistakable symptoms are betrayed, the patient experiences an increasing sensation of languor and of general malaise. It is clear, however, that even in the class of subjects who tolerate minor ailments with relative equanimity, in the early spring season of the year, there is experienced an unwonted lassitude, vertigo, epigastric pain, bowel looseness and inappetence.

At the same time there may be coated tongue, prominent papillæ, even ulceration accompanied by headache and vomiting.

A recognition of the earliest clinical manifestations is of importance in arriving at an early diagnosis. Dr. C. W. G. Rohrer²⁰ says that "the gastro-intestinal derangement is usually the *initial symptom of the disease*." He describes dyspepsia, diarrhea and stomatitis as the cardinal symptoms referable to the alimentary canal.

Dr. George T. Gaumer, of Yucatan,²¹ describes the initial symptoms as:

A sensation of heat in the mouth, throat and stomach upon the exhalation of breath; taste is impaired; there is anorexia and frequently ptyalism, with a broad flabby tongue irregularly marked by red blotches, a peculiar formication in the extremities which often extends very gradually to the whole body.

E. H. McConnell, of Chester, S. C., thinks the stomatitis salivation, burning in the stomach, and diarrhea, may precede the skin manifestation by twelve months, and thinks that the intestine and stomach are the primal foci.

Erythema—First Stage.—After a variable indefinite period of time, usually in the springtime, the characteristic erythema or exanthem suddenly appears and what is commonly described as the first stage is entered. At this time the gastro-intestinal symptoms predominate, and there may be vague pains, vertigo, muscular weakness, especially of the lower extremities, and the deep tendon reflexes may be exaggerated.

The cutaneous manifestations are usually periodical in their manifestations, symmetrical, bilateral, and confined largely to those parts not covered by clothing, such as the hands, face, neck, and the feet and legs. The eruptions on the face may be symmetrical and involve the whole face, the so-called "pellagrous mask," or it may involve the prominent

18. ILLINOIS MEDICAL JOURNAL, January, 1910, p. 54.

19. Hyde: "Pellagra and Some of Its Problems," p. 4.

20. Report South Carolina State Board of Health, 1909, p. 216.

21. Ibid, p. 223.

portions of the nose, cheeks, chin, and ears, or the cheeks alone may be involved, to the exclusion of other parts of the face. The circlet about the neck, the "collare pellagroso" of Casal, is characteristic, and usually represents the limits of the clothing worn about the neck. If the shirt be open in front, then the eruption may extend well down upon the sternum.

In nearly all cases the cutaneous manifestations appear on the dorsum of the hands and the location and symmetry of these lesions are among the most characteristic manifestations of the disease. For example, in the cases observed by Siler and Nichols at the Peoria State Hospital, this bilateral symmetrical involvement of the dorsum of the hands, neck and forearms was noted in 97 out of 100 cases. The eruption may involve only the dorsal surface of the hands and forearms, this being true in over one-third of the cases, but it may appear on the front of the forearms and may encircle the wrist. Involvement of the palmar surfaces of the hands is slight and rare. The extent of involvement of the feet depends on their exposure to the rays of the sun. The so-called "pellagrous boot" is common in the South and in warm countries where the feet are not covered.

Deviations from the symmetrical type are not uncommon and Neusser reports cases where the whole body was exposed to the sunlight, the face, feet and hands only showing the characteristic eruption. Occasionally the shoulders or the genital organs are involved.

Color of Skin.—Siler and Nichols describe the color as at first "a bright red erythema, gradually assuming a darker shade, and after a few days, a characteristic purplish dusky red color, and occasionally the skin lesions would show a greenish bronze cast."

Dr. Hyde says:

The hue of the exanthem differs according to the color scheme of the subject and the length of time during which it has existed. At first the color is dull red, which has been likened to the appearance of the skin after a common sunburn; yet it is rare that the pinkish hue produced by the rays of the sun in the skin of a blonde subject is precisely imitated. The pellagrous erythema at the outset, generally fading under pressure, is more reddish than pinkish, displayed at times with discrete macules which speedily fuse and produce on the backs of the hands, for example, a uniformly smooth, reddened and distinctly outlined area, suggesting, when the cuffs have definitely limited the efflorescence above, the appearance of a glove covering the back of the hand. Later the color deepens, becomes reddish brown, chocolate or plum color, "livid bluish."

These eruptive symptoms may disappear in two weeks, leaving a pigmentation, the extent and severity of which corresponds to the severity of the involvement.

During this time there is often intense itching and burning, and Gaumer, of Yucatan, says the itching and burning become "almost intolerable," and that if scratching be resorted to, the burning that follows is "almost unendurable," and these symptoms with the coincident mental derangement, often lead to suicide. At this time the strength fails, the reflexes are exaggerated, the movements are incoordinate, sleep is dis-

turbed by hallucinations and dreams, the mind weakens and wanders, and the patient may carry on an almost constant conversation with himself or with some imaginary person.

While the disease is usually described in stages, this is merely an arbitrary division designed to facilitate our thinking about the matter, and one stage merges into the next without any clearly defined limits. In the so-called second stage, the cerebrospinal symptoms become predominant. The muscular weakness is greater, motor disturbances are more marked, there may be partial paralysis, spastic or ataxic gait, tremor of the hands, retraction of the head simulating meningitis, or epileptiform convulsions may occur. At this time the itching and burning becomes increased, the gastrointestinal symptoms become more pronounced, fleeting fugacious pains occur, deep tendon reflexes may be increased, diminished or lost. There may be vasomotor disturbances, disturbances of vision, together with marked psychic disturbances. Ocular symptoms are shown by Siler, Watson and Welton to consist of inequality of the pupils, conjunctivitis, retinitis, inflammation of the optic nerve, choroiditis, and photophobia. There is an absence of fever. The blood findings are not diagnostic. There is diminished hydrochloric acid in the gastric juice.

The terminal stage marasmus increases, all the gastrointestinal symptoms become aggravated, weakness is greater, there may be ulceration of the mouth, diarrhea or dysentery, bed sores develop, dropsy occurs, all the symptoms become aggravated, the patient grows weaker and weaker, and death closes the scene.

Suicide.—Dr. George F. Gaumer, of Yucatan, says attempt at suicide is common, because of the intense itching and burning of the skin, which racks the nervous system. In Egypt, even in the second stages of the disease, walking automatism is a frequent cause of innocent suicide by precipitation or submersion in the canals of the Nile, and because fear of impending danger often makes the patient flee from home. The psychosis is usually of a melancholic type tending to make the patient cowardly and rarely becoming aggressive.

Duration.—The disease may last a few months only, or it may, according to Lavinder, continue for 25 or 30 years. Of the 100 cases charted and studied by Captain Siler at Peoria in the summer of 1909, 51 were reported dead on May 11, 1910. Hyde estimates the mortality in the United States at 35 per cent.

Prognosis.—A severe glossitis with ulceration of the tongue and buccal mucosa, with profuse secretion of saliva, is of grave prognostic import, and patients presenting such severe symptoms seldom recover.²² While the dysentery which often accompanies pellagra is often to be attributed to factors other than the pellagra itself, when present and severe it is of grave prognostic import, as these cases, according to Siler, show a profound intoxication and physical failure is rapid and marked. The finding of marked eye changes adds to the gravity of the prognosis; and in a large percentage of cases indicates an early fatal termination.

22. Capt. J. F. Siler, U. S. Army.

Gaumer says that "after mental phenomena have made their appearance, the disease becomes incurable." The occurrence of the rash, and especially of bullæ in the winter, is indicative of profound toxemia and is usually associated with the moribund state.²³

DISCUSSION

Dr. Lewis J. Pollock, Dunning:—Mr. President and Members of the Society: The literature on the subject of pellagra is so extensive, and has been covered so well in Dr. Webster's paper, that I shall only touch on a few points in connection with the subject.

Relative to the non-zeistic theory of pellagra, Sambon has called our attention to the fact that he thinks the disease is transmitted through the tick. Along this line it may be well to state that all investigators who have found organisms which they thought were the cause of pellagra have found, each one of them, an organism peculiar to their own inclination. Ceni, it may be recalled, reported four different causes of pellagra within a short time.

As to the question of pellagra *sine* pellagra, it is a difficult thing to recognize pellagra without the skin lesion, which is its characteristic symptom. I recall a case that occurred at the Cook County Institutions, which proved to be one of pellagra *sine* pellagra. At the time the diagnosis was made the skin lesion did not appear. The patient was a woman, 38 years of age, who developed a certain hebetude, staggering gait, melancholia, long crying spells, complained of dizziness, developed diarrhea and sore mouth. She did not have roughness of the skin. Lumbar puncture was made, as was also a Wassermann reaction, which was negative, and I made a diagnosis of pellagra *sine* pellagra. The diarrhea increased, and upon longer exposure to the sun she developed a symmetrical dermatitis, which was marked by roughness on the dorsum of both hands some two months after the onset. She was treated with transfusion of blood from the case of a recovered pellagrin, which was carried out in accordance with the Crile technic, but she died. The influence of the sun is very well seen in many cases, especially in those who come to you with a lesion on one side. They will come to you with a lesion upon the dorsum of the hand on one side, and the other side, after being exposed some two or three weeks, will develop a skin lesion.

As to the prognosis, in the United States it is bad, on account of the number of acute exacerbations of the chronic illness which we get, and Lavinder has put the mortality as high as 67 per cent. At the Cook County Institutions, of forty-two cases, thirty-seven had died.

The question of the relation of insanity to pellagra is raised frequently. Some consider all pellagra patients insane; while in the United States we find most of the cases among the insane. Yet many of these patients suffer from other psychoses such as dementia paralytica, etc. In Italy it is said that 10 per cent. of the pellagrins become insane, so that all pellagrous patients are not insane, and the number of insane pellagrins in the United States is accounted for very largely, because they have arisen in institutions.

As to the treatment of the disease, all medicinal treatment so far has been of little avail. Arsenical preparations, especially the new one, atoxyl, although vaunted as a cure for pellagra, has been found by experience to be of little or no avail. The serum treatment of pellagra will undoubtedly yield the best results. Several Italian workers have done some work along this line. Gatti has treated two cases of pellagra with a serum, with excellent results, as have Antonini and Mariani. Babes has made an antiserum from a horse with which he has treated cases of pellagra. Cole and Winthrop have resorted to transfusions in eleven cases of pellagra from patients who have been cured of the disease, with good results.

23. Mobley.

Dr. Everett J. Brown, Decatur:—Up to the present time pellagra is only interesting from an institutional standpoint and south of Mason and Dixon's line. The question occurred to me whether I had ever seen a case of pellagra in twenty years' practice. Dr. Zeller tells me that only two cases have been reported in Illinois outside of institutions. One of these was a former inmate of the institution. I went to Peoria and studied these cases of pellagra with Dr. Zeller, and saw quite a number of them, and he tells me that the nurses and attendants ate the same food as the patients, but had not contracted the disease. I asked Dr. Zeller to give the distribution of the disease in Illinois, and it seems that in Bartonville, near Peoria, they have had cases for years among the chronically insane or demented. My especial interest in studying these cases in Peoria was that I thought I had discovered a case in Macon County, and I still believe I have a case. I have not reported it yet because I wanted to be certain of my diagnosis. A man, aged 55 years, came to me with a skin lesion on the dorsum of both hands extending up to the cuff line. Over the backs of both hands were blebs. I went into the history of the case quite thoroughly. I have not told the patient that he has pellagra, nor anybody except a few of my confrères in practice. The public are easily alarmed over this disease. I kept the patient under observation for five weeks. Besides the blebs and dermatitis on the dorsum of both hands and wrists, he had dermatitis on the forehead, with some blebs and on the back of the neck. I gave the patient no treatment. He is in a quiescent stage now, and I shall expect later to see a return of the trouble, as it is intermittent in character. He has had intermittent gastro-intestinal disorders. I recall treating the man for several years at intervals for gastro-intestinal disturbances.

The discovery of pellagra in Illinois is one of the most dramatic things that has ever occurred. Many of you will recall that some of the patients from these institutions were reported as having been scalded and direct charges were brought against the authorities. In one institution two nurses were discharged for having scalded patients in bath tubs. These patients had all the appearances of having had their hands and feet scalded; but later pellagra was diagnosed in these cases, and fortunately these nurses were reinstated after having been discharged. The veil was lifted in one day. One day there was no pellagra; the next day there were forty or fifty cases. It was surely one of the most dramatic things in the history of medicine in Illinois.

Dr. Eugen Cohn, Anna:—I have been connected officially with the Peoria State Institution only a few weeks and I must confess that I, as yet, know very little about pellagra. The present knowledge of its etiology, however, is probably very far from being as extensive as could be desired. In my very limited experience I have attempted as carefully as I could to follow the clinical life of those patients who are there now, and the post-mortem findings of those who have since died. What has interested me more particularly thus far is the sameness of the lesions found in the gastrointestinal system. I have often asked myself the question whether the lesions which I observed in the cases that came to autopsy, namely, ulcerations to a greater or less extent in the colon, cecum and sometimes in the ilium, were a part of the disease or whether they were independent thereof. We have also found in all these necropsies atrophy of the intestinal walls. It was demonstrated before death in some cases which had unmistakable skin lesions of pellagra, living amebæ, within the discharges from the bowels, and on post-mortem amebæ within the ulcers of the colon; in one case a typical hepatic abscess was found, and the question arises did these cases have amebic dysentery independently of that disease or were the intestinal trouble and lesions a part of the disease? The connection between the two, if any exists, interests me greatly. One other point which impresses me forcibly is that in the living, senile appearances were far more marked than one would expect, taking the age of the patient into consideration and autopsy revealed in the same cases corresponding senile changes within the vital organs and vessels, viz., the pellagrin of say 45 years presented kidneys, myocardium, vessels, etc., normal to the man of 70 or 75.

SOME DIABETIC OBITER DICTA.*

S. T. ROBINSON, A.B., M.D.

EDWARDSVILLE, ILL.

Mr. Chairman and Ladies and Gentlemen:—Of late our profession is being characterized as one whose chief function ultimately will be prevention rather than cure. Already, indeed, this status has been reached to some extent, and to-day what our art lacks in the one resource it is rapidly gaining in the other. Many of the infections are now understood, and where no specific remedy has been discovered sanitary prophylaxis alone can often abort the morbid field. Yellow fever is a notable example.

This magic touch, however, deals with the extrinsic causes of disease. As the house fly, the mosquito, and their congeners are studied—as all the pollutions of air, food, and water, are bared; in other words, as great pathologic secrets are uncovered, one factor in mortality shrinks amazingly. In short, the premise to-day is that, through these marvelous revelations, the average of human life, with decrease of pain, with greater efficiency of labor and consequent increase of happiness, will be wonderfully extended. And of such is the glory of medicine.

This picture, so alluring, has nevertheless a reverse side; for if infection yields, many other perils remain. Largely they come of the increasing demands upon the race, of its need of sudden adaptations, its inevitable fatigue, its indulgences; and as wealth and luxury accumulate we slip away from the natural life. Here, then, are modern currents, with immediate influence on our art, that may not be ignored. Here, in large part, lie the origin and pathogenesis of many of the morbid conditions that to-day are forming an increasing percentage of a changing situation. And if the older diseases of germ origin are now less aggressive, this other class of ailments still remains refractory.

Thus, what progress has the medical treatment of diabetes made in the last thirty years? To-day, what do our medicinal resources amount to? Perhaps, if one reads the picturesque brochures of proprietary medicine, a very young and unsophisticated physician may possibly be deceived temporarily by their extravagant claims. As for the patient himself, he is readily trapped until time, his most precious asset, has been frittered away. Turning, however, from this *ignis fatuus* of commercialism to the standard authors on diabetes: to von Noorden, to Pavy, and to Tyson, what do they confess? That the disease is still a mystery, that our knowledge of it is still, for the most part, rudimentary. Of actual curative treatment there is that hoary old medical paradox of a multitude of remedies which, on closer approach, resolve themselves into so many broken hopes. In other words, we are still in the therapeutic cul-de-sac of our fathers. Opium and its derivatives, antipyrin, arsenic, mercury rarely, possibly jambul, of late atropin, and not omitting electricity or organotherapy, such are the usual remedies, each with many restrictions and limitations. These, and the numerous failures that occur, sufficiently

* Read at the Sixtieth Annual Meeting of the Illinois State Medical Society, held at Danville, May 17-19, 1910.

stamp the drug treatment of diabetes. Its employment involves no principle, no pathologic law, and is always symptomatic and empirical. In a word, of diabetes as of cancer, we know little that is final; as yet, its chief facts are largely collateral. Its etiology is uncertain, its pathology obscure, its development often larvated, its medical treatment always groping. Can we, then, assist these patients?

Yes! we are by no means helpless. If to-day there is no proved drug remedy, we nevertheless stand on solid rock. Let us not forget that drugs are sometimes our least important agents. The reverse is the superficial view, the popular view, with the value popular views often possess. In fact, our assertion should never hesitate that diabetes, if yet lacking a specific cure, is often quite tractable. Too much harm has already been done by a nihilism that can end, on the one hand, only in unjust professional abasement, on the other in the rise of faddists. In such an unfortunate atmosphere the materia medica easily becomes the practitioner's land's end, and in its mists he may easily forget that a true therapy is as versatile as it is never hopeless. With the consciousness, then, of growing power, let us first debar nihilism.

Next, an early diagnosis is the greatest service we can do the patient. In this platitude everyone will at once concur. But is an early diagnosis usually made? Is it ever easy, or always possible? A glycosuria, you know, does not necessarily mean diabetes, though it must mean danger. There are often some fine differentiations, and these at a period when differentiation may be difficult. Moreover, how many men will test unceasingly in order not to miss the occasional case? As a fact, the early stages are often lost. Not only does this occur through the ordinary sources of error, but the chief symptoms, as already stated, are sometimes larvated, oftener intermittent; and inasmuch as it is precisely in these cases that we may be of most service, an early diagnosis becomes just as imperative as it is in tuberculosis. I have seen diabetes mistaken for arteriosclerosis, for malaria, for rheumatism, for phthisis, for neuritis; and in each one of these cases the revelation on testing was unmistakable. Such instances suffice to show how the hasty or cocksure practitioner can fail at a critical time; later on the opportunity of greatest good has perhaps been wholly lost. Early diagnosis, then, is the first requirement in diabetes; as a consequence, the routine tests are essential.

What does that master, von Noorden, tell us here? "*When we consider how secretly the disease develops, and how much more frequently it occurs than used to be imagined, it is the duty of the physician to examine more frequently than is now the custom the urine of people entrusted to his care.*" Contrast this advice with that given in a well known book entitled "The Physician Himself." Here the author explicitly warns young physicians against such a habit, and of the danger he thinks is thereby incurred. Beyond doubt, this advice has been responsible for many errors. Happily, that day in medicine has passed. The Baltimore dictum may, therefore, be safely left to its own inanition; the von Noorden dictum will live as long as the medical truth hunter lives!

In the pathology of diabetes I would briefly consider an obscure drift which as yet seems unrecognized. As a working hypothesis, then, which, so far as I can ascertain, has never been presented before, the following is offered: That diabetes is not, *per se*, a disease at all, but is purely a morbid condition, of the same general order as dropsy; and, like dropsy, is always the result of antecedent disease or injury, single or complex. As normal metabolism must proceed from many cells acting together, it is also conceivable that, under either toxic blight or perturbed innervation, these cells may first become embarrassed, next inactive, then dead, the transition being wholly individual, hence almost imperceptible at first. So are many other transitions in pathology. As an actual laboratory fact in the morbid anatomy of diabetes, both liver and pancreas show not only many dead cells, but an effort at their reproduction. One by one the loss is insignificant, but steadily continued it must result in a diminished aggregate of cell activity; and by just so much does the ingested carbohydrate reach the general circulation. Thus, in a broad survey, there is first an impaired or limping function, and as its contraction proceeds a condition results which is quite analogous to what is usually called paresis in other parts of the body. For the purposes of an hypothesis it seems entirely fair to employ here the term paresis; that its first cause may sometimes be distal (toxic blight), sometimes central (neurogenous), are wholly compatible facts; they are also closely analogous with what happens elsewhere. Or, paresis may become paralysis and end in complete obliteration of the function. Finally, the retrograde metabolism of the last stage, with autotoxic products, is but the logical conclusion of remaining nutritive elements working "full speed astern" in disintegrative processes.

It is impossible now, and hardly necessary, to discuss the metabolism of carbohydrates; perhaps the error which produces diabetes is still unlocated, though if any one has come near the secret that man, in my judgment, is Pavy, of London. It is enough to say here that in diabetes the normal process hesitates, then fails, as already outlined. With such failure there is a crude absorption of carbohydrate as glucose; or, in case of brain or nervous injury, the stored up glycogen is released as free glucose. In either case the resulting hyperglycemia, the accompanying toxemia, and the inevitable mal-nutrition, soon develop all the classical symptoms. On the other hand, in dropsy there is sustained first the loss or impairment of an essential element in normal equilibrium which, in its final analysis, is almost as obscure as that in diabetes. At once certain forces are so disturbed that the lymph current is more or less diverted, the processes it represents are morbidly employed, and dyspneas, anasarcas, and hydremias, result. In each case there is a progressive loss of cell activity, which in diabetes is nutritional, in dropsy is circulatory. In each the condition is secondary, but in diabetes it may appear so remotely from the first cause as to leave that factor in great obscurity. And if, in the sphere of pathology, dropsy and diabetes are antipodal, the fact may be regarded as rather confirmatory than otherwise: moreover, the closer the etiologic and clinical analogies of the two conditions are studied, the

more will diabetes, like dropsy, be regarded as an aftermath, and not as the original disease.

The hypothesis must, however, remain more or less speculative until further support is advanced; possibly, it may appeal to a better equipped student. Leaving now this field for another equally fascinating, let us glance at some of the principles of treatment. Of drugs there is little to add save that if the foregoing bit of clinical pathology were once accepted there might be more to say; but this, as Kipling would remark, is another story. Certainly, on the old medicinal lines much uncertainty and disappointment are still inevitable. For the present, accordingly, let us dismiss the subject of drug treatment. In the great field of dietetics, then, with its broad, hard fixed laws, with its subtleties, with its almost infinite niceties and elasticities, must the problem as yet be met, now as for many years past.

Much has been said concerning the risks of a complete deprivation of carbohydrate; namely, the ensuing acidosis, intoxication by the acetone bodies, and its ever present threat of coma. Very likely conservatism in this matter has been overdone, yet undoubtedly an abrupt and radical change of food is dangerous in many cases. How then, may we institute a strict diet, yet avoid this peril? The only safe course is a gradual limitation of carbohydrate. Thus, the patient's economy may be more or less gradually accustomed to the change, a very essential point. The rapidity of this accomplishment, another highly important item, will depend largely on the special case in hand, as well as upon the patient, his surroundings, and the physician's skill and tact. There is good ground for believing the plan to be effective, and far less risky than any other. In grave cases the oatmeal cure of von Noorden would eminently fill the indications, particularly in the beginning. Of course, if the diabetes is mild the danger may be small, though it should never be forgotten that coma, like neuritis, may develop in any case. In severe cases it is more to be feared. Hence, if there is merit in the plan of gradual limitation of carbohydrate, its most successful application should be found in this latter class of cases; and such seems to be the fact.

Unquestionably, tolerance of a proteid diet may often be established; certainly, it becomes a necessity if the patient is to be reclaimed. Once brought about, the strictest rules must be enforced either on a continuous or interrupted plan, as may be suitable at the time. Here I would add a word in favor of the much abused gluten flour. Pavy says the best now obtainable in England contains less than 10 per cent. of starch; in America, the Pure Gum Gluten people claim only 15 per cent. of free starch, and that in proteid they exceed the government's requirements. While their figures are by no means wholly satisfactory, and their statements not always lucid, it is impossible to deny that an improvement has been made. I have used gluten flour at times, and often find it useful in the early management while tolerance of a proteid diet is obtaining. If, as some think, a certain amount of carbohydrate is essential to the diabetic, then a food consisting largely of nitrogen compounds should come nearer filling the exact requirements than one of

almost pure starch. But the facts are, carbohydrate is not essential, tolerance of proteid is, and the gluten should serve only to make easier and safer the first stage of the diabetic's long and tiresome journey. At this time it may be used in varying degrees until the purpose of its use has been accomplished; then it should be set aside until the patient, having regained some tolerance of carbohydrate, has passed through the dietetic valley and is again on the ascent. Now its use may be resumed cautiously, as the case permits. But in the early dietetic strain, in selected cases, the gluten, with its high content of proteid, while giving both force and variety to the daily ration, affords at times a psychic support that must not be despised. The main thing is to gain a tolerance of proteid; this objective must never be lost. If, however, while such tolerance is sought, and gluten flour is manipulated to accomplish that end, the patient's glycosuria is thereby markedly increased, then the gluten must at once be manipulated out of his reach.

The situation is closely comparable to the induction of chloroform narcosis; and just as this is ordinarily safe, particularly in the absence of degeneration, so a severe diet can usually be safely borne in early diabetes. Healthy people, we know, have a vast resiliency in both matters. Arctic explorers have lived under the most trying circumstances on the crudest forms of proteid and fat. If, however, in administering chloroform, a rebellious first stage develops, or the narcosis suddenly deepens into the third stage, if the patient's vitality is low, if the anesthetist rushes a full inhaler, vaso-motor paralysis and sudden death may easily occur. Exactly the same result, in exactly comparable ways, may unexpectedly overwhelm the advanced diabetic who has crowded upon him without preparation an extreme diet. He sinks under the burden of a profound auto-intoxication in which he has been heedlessly plunged; or, perhaps, as will sometimes happen in chloroform narcosis even in skillful hands, a hidden weakness exists and coma appears despite all care.

We should bear these dietetic facts ever in mind: That while at the beginning of treatment the patient has intolerance of carbohydrate, so an abrupt and radical reversal of diet may produce intolerance also of proteid. Thus there will be a double intolerance and the trouble deepens. But it is wholly upon the establishment of a tolerance of proteid that success depends; for it is only after a more or less severe proteid diet that tolerance of carbohydrate will be regained. Hence, the first essential, after diagnosis, is to gain a tolerance of proteid, and by tolerance of proteid is meant, of course, the physiologic condition wherein the patient is free from alarming acetonuria and the substances usually called the acetone bodies. Once this has been accomplished his urine may begin to run sugar-free. If now, with tolerance of such a diet fully established, some weight is gained, he has made a distinct stride forward. Even more notable, if with the same diet, and a urine continuously sugar-free, there is secondarily some loss of flesh, he has made much greater progress, for it will be found that he can again assimilate an appreciable quantity of carbohydrate. In other words, he has now reached, in part at least, the state of the healthy man who is underfed.

and thus accordingly loses weight. This extremely interesting phase of the diabetic's recovery is clearly set forth in Pavy's work.

Such results are, however, seldom obtained by simply directing the patient to avoid sugar and starch, and to live mostly on meat, or by handing him a printed diet list. Too often, I imagine, this is about the only supervision given. To-day, a technique in this matter has developed that calls for much special training, and a study not only of foods but of individualized cooking; and for him who has not been initiated into the mysteries of a diabetic kitchen, the field is simply a *terra incognita*, an unknown world. Modern practice will more and more demand special preparation in such work; for not only is the diabetic technique elaborate and full of exacting conditions, but to win success it is as imperative as is any other technique. It is my belief that the most successful method of treatment will become, in part at least, institutional; and just as to-day the surgeon exacts a well appointed hospital for his operations, so the physician, who must guide and educate the diabetic through a maze of chemic, physiologic, and dietetic technique, will demand and receive the same helps.

DISCUSSION

Dr. R. T. Woodyatt, Evanston, Ill.:—There is a great deal of truth in Dr. Robinson's remarks about the state of our knowledge concerning diabetes. While I personally believe that this knowledge is deeper in some respects than that of any other known disease, still it does not include anything which will enable us to institute active measures for the purpose of wholesale prevention; nevertheless, it would be a mistake to say or to believe that there is no such thing as diabetic prophylaxis. If prophylactic measures, such as are now possible, were generally carried out in practice every day the mortality from diabetes would be materially reduced. Any one who has had the opportunity of observing diabetic cases closely, knows that certain ones, caught in their incipency and treated rigidly, that is, made sugar-free and kept sugar-free absolutely unremittingly for months and years, may live the full span of life without a recurrence of any diabetic symptoms.

There is also a class of cases in which young adults develop a form of diabetes characterized by a rapid onset, severe glycosuria and even acidosis, with heavy loss of weight—symptoms which one would have to recognize as those of a so-called "severe" case. Such cases may nevertheless, under rigid treatment, undergo a transition into what would then have to be called a "mild" form of the disease, compatible with a long life, sugar-free, free from acidosis, and from all symptoms and inconveniences except those incident to the strict diabetic regimen. If such transitions can occur under timely treatment after a case has developed, how much more could we do if we were able to anticipate the occurrence of the diabetes, by diagnosing the tendency to the disease before it actually began. This can be practically done in this way: A practitioner on receiving a case of diabetes recognizes that he has two duties to perform, one to the patient, and the next to the family; he then searches out in the family all those who have not yet had or got diabetes, but who are going to have it, and puts them under prophylactic care, thus preventing its occurrence in a definite number of individuals.

How can we recognize the incipient case? In the first place, sisters or brothers of the diabetic individual who are obese are likely candidates in whom to look for the occurrence of diabetes. In the second place, relatives who have goiter, or a tendency to thyroidism, should always be considered suspicious. If there is any doubt about the question as to whether there is a tendency to the disease, it

can be definitely settled by a simple test. The test is simply to administer to the suspect 75 grams of glucose, collect the urine for five hours afterward, and test it for sugar. In case a positive reaction is obtained, the carbohydrate tolerance is lower than normal. Having discovered such a case, make the patient live a life in which he will avoid raw sugar, sweets and such things, have him live moderately with regard to those things which will cause unusual wear and tear on the nervous system, such as life on the stock exchange, abuse of alcohol, etc. Such a patient should not be subjected to unusual emotion or excitement. If this line of treatment were generally and consistently followed, the mortality from this disease would be materially reduced.

I heartily endorse what Dr. Robinson has said with regard to the fallacy of relying too much on drugs in diabetes. The thing is overdone to a large extent.

Dr. Fenton B. Turck, Chicago:—The treatment of diabetes may often rest largely on a protein diet. Restriction of carbohydrates being necessary, it is essential to know what form of protein to feed these patients. If we give them too much gluten bread, there is too much glutamic acid—as much as 39 per cent. Glutamic acid is a toxin and, therefore, in excessive amount glutamic acid will precipitate or produce other toxic symptoms. If we feed these patients too much meat, we have a high percentage of extractive, such as creatin, xanthin, hypo-xanthin and purin bodies, and as the result of these we furnish the intestinal micro-organisms with pabulum out of which toxins are formed, and consequently toxemia occurs from excessive meat diet. In meat there is a large amount of fat that is very indigestible, especially those fats of high melting point, as stearin, which undergoes decomposition in the intestines, forming butyric acid, resulting in acidosis. To avoid toxic effects it is essential to know the extent to which we can furnish gluten in the form of bread; also to supply the meat in such a form that it may be free from toxic substances; and, at the same time, render it very digestible in the alimentary tract, thus limiting infection in the lower intestinal tract. The meat must be so prepared as to remove the fat and the extractives at the same time, as well as transforming all connective tissue into gelatin. The food is thus digested in the upper intestinal tract without causing toxemia. Preparation of the meat is as follows: The meat is put in water, soaked and the juice pressed out. The meat is then put in a steam chest and in water and steamed for several hours. This removes the fat and the extractives and transforms the connective tissue into gelatin. This renders the meat free from toxic effects and it is readily digested in the upper alimentary tract. If we wish to increase the digestion of the meat we can add an acid to the meat before cooking, which increases the hydrolysis of the connective tissue, transforming it into gelatin. It is all absorbed in the stomach, duodenum and jejunum, and there is no residuum which can be found in the feces. It is essential in a meat diet to examine the feces to find whether there are any remnants left in the feces, for the reason that micro-organisms in the lower ileum will develop and generate toxins in these cases, and the secondary effects resulting from this toxemia are such that these patients cannot stand. By some such means, as the essayist has suggested, we can educate these patients to a high protein metabolism, so that they are able to sustain life and to obtain the necessary calories, and, at the same time, increase their strength and prevent intoxication. We may fail to increase protein utilization, but we need not fail to prevent intoxication. I wish also to say that drugs are sometimes very useful, and I merely want to call attention to the use of the mixed alkalies which can be given, even though we have no acidosis. It is essential in these cases to supply them with sufficient alkali to neutralize acid formation. By this means we will be able to give them a high protein content without the usual toxemia which will arise from the secondary infection and putrefactive products that come from the intestinal tract.

Dr. S. T. Robinson, Edwardsville (closing the discussion):—I simply wish to remark that it is impossible in a twenty-minute paper to cover the field of diabetes. Each case must be examined and largely treated upon its own merits.

The concluding remarks of Dr. Turck on the adaptation of proteid foods to the diabetic's condition seemed to me to be extremely wise and full of good reasoning. In these matters the practitioner must search out and by careful examination of each case adapt the food largely to the individual, the main principle, however, being that we must keep these people off of carbohydrates. We must do it as soon as possible. That is the first consideration, and the next consideration is to adapt the proteid to the individual.

SOME BORDERLINE PSYCHONEUROSES.*

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A good deal has been said and written regarding the various marked psychoses and neuroses. It is the intention of this brief paper to consider a group of very perplexing cases that frequently come under observation which may range all the way from an apparently normal individual who might be said to be eccentric to one who at first glance simulates some of the true psychoses or neuroses.

This group includes various abnormal conditions characterized by the follies of indecision and doubt, obsessions, tics, agitations, phobias, states of anxiousness, neurasthenia, psychasthenia and certain traumatic neuroses and psychoses. In this group we find a reduced mental tension resulting in fears or fixed ideas which dominate the patient's mind, rendering him incapable of focusing his attention upon his usual normal occupation. He is self-centered and introspective. These ideas tend to harass the patient, continually rendering him unhappy within himself and frequently a nuisance to those with whom he comes in contact. As a rule, he is perfectly aware of the inconsistency of his ideas and can frequently be argued out of them for a time though they soon return. It is this ability to see and discuss these ideas in their proper light that differentiates them from the delusions of the true psychoses.

Most cases retain a fair degree of psychic balance over a long life although some may shade imperceptibly into the deeper psychoses. These changes might be called physiologic alterations of the feelings, the will and the perception which may either right themselves under proper treatment or go on to the more profound psychoses. Usually the patient talks freely of his condition and wants to tell his ideas. He is very anxious to get well and is willing to work hard to do so but in spite of his best endeavor to argue himself out of a senseless fear or refrain from committing a useless or silly act, the idea insists upon recurring and demands his obedience.

It is very important to obtain a full and complete personal history of the patient as well as a family history. By so doing, we will find a certain number, prenatal in origin, but as our knowledge of the personal history and conditions of the patient is increased, we will be able to trace the origin in a large number of cases to causes arising after birth. In a

* Read at the Sixtieth Annual Meeting of the Illinois State Medical Society, held at Danville, May 17-19, 1910.

large per cent. of cases, the patient comes into the world with congenitally lowered powers of resistance to emotional, intellectual, physical and chemical stress. This lowered resistance which constitutes the chief predisposing cause is a bad heredity; by this we mean that there is transmitted from the ancestors a biologic weakness, or in other words, an unstable organism. This, together with a bad environment and improper education and training, renders the individual especially susceptible to an external stress. By stress, we mean all of the forces which act upon the individual organism and its constituent cells; this may be either physical or psychic, and therefore includes various toxic and metabolic disturbances, the wear and tear of life, mechanical work and intellectual effort or a nutritional disturbance.

Every experience which produces the painful effects of fear, anxiety, shame or of psychic pain, may act as an exciting cause. Whether an experience becomes important naturally depends on the person affected; as in the traumatic neuroses, the active etiologic factor is really not the insignificant bodily injury but the effect of the fright; that is the psychic trauma. Notwithstanding the inherited predisposition, an exciting cause is necessary in the majority of cases. As our knowledge of the chemistry of disease grows and as we examine patients with greater and greater thoroughness, we find a large number of cases manifesting either a toxic or a nutritional disturbance.

If we do our duty by these cases, they must receive a thorough examination, then some carefully considered diagnosis must be made and some definite treatment instituted. By no means should we say that there is nothing the matter. We must not lose sight of the marvelous psychophysical organism which constitutes the self and of the need of balance and a good proportion which is necessary for the health of such a complex structure. Usually, in this group, there is a lack of proportion and balance in mental life. The emotional disturbances, anxieties, disappointments and thoughts which have a contradictory effect on the personality, tend to keep the thoughts in one groove on one set of ideas or objects. When to this is added some derangement of the physical system, the patient becomes self-centered and miserable. We know that when one feeling or idea is allowed to monopolize consciousness the will gets weaker and weaker.

If we analyze more closely some of the leading symptoms, it will help us to a better understanding. Judgment being the highest quality of the mind, it is quite natural that with the advent of diminished nervous tension, it should be the first mental attribute to decline with the inevitable result of vacillation and indecision and with this comes doubt. With this decline of judgment comes also a lack of power to inhibit. The patient complains that he cannot stop thinking; this automatic thinking goes on into the night, causing insomnia or dreaming.

In conjunction with diminished inhibition and automatic thinking comes another symptom which is a tendency of a single idea to repeat itself over and over. The thought or obsession being constantly repeated naturally impels the patient to action or impulsions. There may be a

decreased capacity for mental work. Mental effort may become difficult or impossible or there may be an inability to fix and maintain attention; memory becomes defective. Ideation does not occur with the usual vigor and rapidity. The patient becomes introspective, self-watchful, associating external conditions and suggestions with an unpleasant feeling tone; the ideas, either conscious or sub-conscious, may be of a vague sense of dread, as of impending danger or harm. Fears or phobias may be of every conceivable kind and many names have been coined to describe them.

In considering the treatment of this group of cases, a very important factor is that of prophylaxis and in order to be most efficient should be begun even in the third and fourth generation of the ancestors. Much, however, may be done for the predisposed neurotic child by encouraging a wholesome, social environment and teaching him to observe all the rules of hygienic living; especially should he get the proper amount of sleep in the open air or in a well-ventilated room. The nutrition should be looked after by giving a liberal wholesome diet. The education and training are important: he should be taught what responsibilities to assume and what to decline; what he can do and what to avoid. Nothing should be permitted to interfere with proper development.

In the treatment, each case should be treated individually by the application of proper therapeutic measures, as indicated after a clinical and laboratory diagnosis has been made. Some may be so slightly affected as to require nothing more than a change of scene or removal of the exciting cause. For those more seriously ill, the *Rest Treatment*, as devised by Dr. S. Weir Mitchell, is the best. Its important elements are: Rest in bed; proper nursing, feeding, massage, isolation, baths and electricity. Rest in bed should be as near as possible absolute, the time in bed depending upon the severity of the case. The nutrition should be looked after by giving a large quantity of easily digested food, consisting of milk, eggs, cereals, fruit juices, vegetables, lamb, chicken, etc., given at proper intervals. Coffee, tea and alcoholics should be avoided. Massage takes the place of exercise of the bed patient. It increases the peripheral capillary circulation and gives the muscles work without causing fatigue. Isolation is very important; in severe cases mental rest is as important as physical rest. The patient should be isolated, especially from members of his family and immediate circle of friends. Much harm is done by the immediate association of the patient with his relatives. Their mere presence is a constant reminder of his changed condition and their sympathy and solicitude accentuate his suffering and as a rule emphasize his delusions. Hydrotherapy and electricity should be used as indicated. The rest treatment may be carried out in detail or modified according to the indications in each individual case. All possible causes of external irritations should be removed. Ocular disturbances should be remedied, etc. Proper attention should be paid to elimination.

Drugs play a very small part in this group of cases. When there is much gastric atony, increasing doses of *nux vomica* before meals is useful. The glycerophosphates of lime and soda are very beneficial as nerve

tonics in selected cases. In some cases, quinin, iron or arsenic are of service in aiding nutrition. When indigestion is present, bitter non-alcoholic tonics, mineral acids and intestinal antiseptics are often of use. The chief use of drugs is to combat certain symptoms. Great nervous irritability may be benefited by moderate doses of sodium bromid. Vasomotor disturbances may be treated by nitroglycerin or nitrite of sodium. The bowels should be kept open and the kidneys active by the free use of water, or if necessary, cascara at bed-time or salines before breakfast may be given advantageously. If a warm bath at night or massage at night followed by a glass of hot milk does not secure sleep, trional, sulphonal or veronal may be administered in some hot milk or chocolate.

The psychic side should not be neglected but each case should be analyzed, warped views and obsessions straightened out and explained by logic, persuasion and encouragement. Those who have much to do with organic functional neuroses and psychoses are familiar with the wonderful influence they are able to exert over the mental attitude of those afflicted by kindness, patience, firmness, interest and sympathy. Everything said and done, if rightly said and done, conveys a suggestion, inspires hopefulness and increases the efficiency of other methods of treatment; points out the way to health and a new lease on life.

THE PREVENTION AND TREATMENT OF INSANITY.*

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In reviewing the various etiologic factors that have either direct or indirect bearing upon the production of insanity it is apparent that when we wish to consider the prophylaxis of disorders attacking the mind, we must look, not only upon the important medical aspect of the subject, but upon its many educational and sociologic phases as well. In no disease, with the possible exception of tuberculosis, and venereal afflictions, is prevention of greater importance to the welfare of society.

While I have little that is particularly new to offer upon this subject, I feel that it is of such vital interest to us all, that it cannot be too frequently or forcibly brought to our attention. We keenly realize the close relation which exists between insanity and various other forms of weakness affecting the physical, nervous, and moral state. We know that often various types of the defective and delinquent are bred of the same strain of blood which produces insanity. Knowing this, we must be prepared to do battle against all of these forms of degeneracy, if the number of those predisposed to mental disorder is to be decreased to any perceptible degree.

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We find there is a great divergence of opinion among those who have made a study of heredity influences. The per cent. of cases in which hereditary predisposition is considered a vital factor in the production of insanity varies from a small to a very large ratio, from twenty (20) to ninety (90) per cent. My own experience inclines me toward a belief in the higher ratio, for a careful investigation of the family tree of the person afflicted, when a clear history is available, usually reveals evidence of degeneracy somewhere along the line. I fear, however, that the recognition of those who are predisposed to mental diseases leaves much to be desired. We are fully cognizant that certain forms of psychoses and neuroses, strictly speaking, belong to groups that are degenerative in character, and that those coming from such a stock are in danger. It is possible that careful research and study of individual constitution and character may some day result in a more timely recognition of those who are predisposed, and may bring about a more exact basis for the determination of this question. For the present, it seems that the existence of marked degenerative traits in the family history, and the various nervous or neurotic states evident in childhood and early adult life, should act as ample warning. It suffices to say that there are certainly many individuals who, by inheritance, come into possession of a feeble constitution and a predisposition towards nervous instability. Our prophylactic efforts should consequently be first directed to the removal of this important fundamental cause.

Let us look upon the prophylaxis of insanity in its broadest sense. There are indeed, as I have said, many underlying problems of a sociologic nature which have an important bearing upon the subject at hand. I should like to dwell at some length upon a few of these points. It is surely necessary in the interest of the prevention of insanity, that a vigorous campaign of general education be instituted. This cannot be done by the medical profession alone; teachers, clergymen, and law makers must be enlisted in the cause. All good and intelligent men and women, in fact, especially fathers and mothers, should do their part; for a timely knowledge of the principles of good health and character, such as will protect the young and safeguard their future, should be gained, to a great extent, within the home. It surely well behooves parents to inform themselves thoroughly upon such subjects as are of importance to the physical, mental, and moral development of their offspring.

Parents should warn their children of the serious consequences which befall those who indulge in the various vices; they should not hesitate to give their boys timely information of the dangers of venereal diseases and of the disastrous consequences following them, in many cases affecting posterity and the innocent. How often, on account of prudishness on the part of parents, a child is allowed to grow into manhood or womanhood without any correct conception of the truth relating to bodily health and functions. How often, as the result of ignorance or thoughtlessness on the part of their elders, our boys and girls are left to grope their way in the dark, not infrequently, with serious consequences to themselves.

Fathers and mothers, it seems, ought to be well aware of their own deficiencies and, as far as possible, those of their ancestors. They should be warned of the danger of transmitting similar conditions to their progeny. They should know that influences affecting the development and destiny of their children must be reckoned with long before the birth of the children themselves, and that the possession of a healthy mind and body on their part, especially at the time of conception, is an urgent necessity.

It would be well if all our schools would adopt the plan of having a systematic lecture course, to be given by physicians, upon various topics pertaining to health and hygiene. Pupils of proper age, boys and girls in separate classes, should be instructed in sexual physiology and morality. They should be taught of the perils of venereal diseases; should know that syphilis, for instance, is often responsible for progressive organic brain disease, and frequently produces physical and mental degeneracy in succeeding generations, as is demonstrated by numerous examples within the institution for the epileptic and feeble-minded. The public in general should be well informed regarding syphilis and its relation to paresis and various other forms of degeneracy. Those who see the large number of deaths which occur in the hospitals for the insane, from paresis alone, will heartily endorse this statement.

The public should also be made fully aware of the great number of insane and other defectives whose degeneracy is distinctly traceable to alcohol. The public school pupil should receive adequate instruction regarding this drug; he should be taught in detail of its dangers, and its effect should be clearly and logically explained. Youth is usually amenable to reason, and this is the time when facts and explanations, such as these, should be made available. An enduring impression is possible, at this period, upon the mind and character of the young, that is of far greater influence for good than any appeal that could be made in later life, to their emotional nature. Instructions should also be given with regard to the formation and effect of the drug habits.

Not alone should appropriate lectures upon these subjects be given in the schools, but I cannot see any objection why every boy upon reaching the proper age, should not receive from his teachers some form of literature, setting forth concisely and plainly, such facts as are necessary for the guidance and maintenance of his health and morality. "Forewarned is forearmed," and he is that much better prepared to resist the temptations which may beset his path. What applies to the education of boys, moreover, would seem, in every way, to be equally desirable for girls.

Special safeguards should be thrown about the young at puberty. Those predisposed should then be carefully guarded against undue strain of mind and body; they should be protected from disorders, infectious and exhaustive in character. They should be free from worry, over-study, and all which might in any way undermine the nervous system. "A healthy mind in a healthy body," may not be correct in all cases, but we know that it bears great weight, when we consider the important part

that physical defects play in the production of insanity. Of this phase of prophylactic treatment I will speak again later on.

Schooling of children should be carefully considered and regulated. Education which is easily attained by one child may be much too difficult for another. Our universities and institutions for higher learning, with their rigid entrance requirements, would do well to demand, also, a clean bill of health from their matriculates. It is certain that parents very frequently force upon their children education which is far beyond their reach. An official board of medical examiners in connection with our colleges and universities might be an excellent safeguard against such mistakes.

The selection of a vocation or livelihood should be made, as far as possible, with full regard to the same consideration as applies to the gaining of an education. The duties, hardships, and mental strain, incident to the vocation or livelihood, should be weighed against the mental and physical capabilities of the person in question. If competent medical aid were sought at this time in advice and consultation, before making an ultimate decision, much might be done to prevent the fatal crises which occur in the lives of so many susceptible young people.

In our own profession, for example, we know that many a one might have escaped shipwreck had he chosen a less arduous vocation, with more freedom from physical and mental strain, and harder, perhaps, of access to drugs and stimulants. Victims of the drug habit are many, and are found in all stations of life; in the homes of wealth and poverty alike. The rich should be well informed of the danger of these and other excesses, which their financial ability so readily permits; and the poor should not seek forgetfulness of their suffering through such avenues as these. We cannot wonder that the children of the poor, begotten in surroundings such as are found in all of our large cities, so often bear the heavy burdens superimposed by such environment. In many instances a child's home influences are most contaminating, and often it would be infinitely better if the parents were deprived of any share whatever in its upbringing.

As civilization moves onward insanity not only seems to increase, but actually does increase. Perhaps we are justified in saying, in explanation, that, with the progress of the years, the struggle for existence becomes increasingly a mental one. The tremendous advance in all pursuits of life are responsible for an increased strain upon the average mentality. Life in many thickly populated areas is one of continuous speculation and worry. Competition of the keenest and most compelling sort is encountered on every side. In many cases the environment of the great city proves fatal to those of insufficient capability.

This matter of environment is one of deepest interest to us all. In the battle against insanity and allied diseases, nothing is of greater assistance than proper surroundings. Environment may be, in truth, a potent influence for either good or evil, as the case may be, and will often overcome many shortcomings that are inherited. When I speak of enviro-

onment I use the word in its broadest sense, meaning everything by which man is affected and modified in his physical, mental, and moral growth.

Social settlement work in the congested districts and slums of our cities should be encouraged in every possible way. It is without doubt a wonderful help to the people and its value as an aid in solving many social problems should not be underestimated. The investigation and careful study by the courts of crime and criminals and their antecedents; the work of the juvenile courts and their probation officers; the many homes for the unfortunate, also accomplish a vast amount of good, and could be made to furnish, indirectly, much valuable aid in the solution of many questions connected with the prevention of insanity.

Some of our states are beginning to realize that the prevention of the defective and delinquent is not alone a very important humane question, but that, from the standpoint of public economy, much may also be said in its favor. Creditable efforts in behalf of this and other phases pertaining to public health are being made by these states; yet, taking into consideration the half-hearted and wholly inadequate efforts of other states, they are entirely insufficient to get the upper hand of these, and many other evils which besiege and burden us. So long as one state permits what another state holds unlawful, just so long will the ultimate results continue to be unsatisfactory.

Questions such as these, and many others concerning diseases of menace to the public health, are surely of sufficient importance to deserve the supervision of our National Government. Difficulties in the way of the assumption of such responsibilities by the government are evident, when the infringement of individual state rights is considered. If this matter, however, were controlled, as it properly should be, by some form of interstate legislation, even though this might possibly require the creation of a constitutional amendment, these difficulties could and would be overcome.

Does not the government spend millions of dollars in the development of domestic animals and agricultural products? Upon the appearance of an epidemic among beast, or blight among fruit or vegetables, are not liberal sums of money forthcoming to help fight and subdue the disease? While all these things are of immense value to the prosperity, and indirectly, to the general health of the country, yet is not the most essential and vital undertaking, after all, the direct promotion of the health of our people?

Surely the development of public health might worthily become a matter of national interest and supervision, and, through the cooperation and control of local and state boards of health, for "in union there is strength," we might be able to secure results more far-reaching than could well be estimated.

The insane hospitals, all over the world, daily send home patients apparently recovered from their attacks of insanity. Many of these cases are types in which inherited predisposition and degeneracy play an important part, as, for example, the manic depressive group. They are, as I said, apparently recovered from this particular attack. Their special

constitutional weaknesses, however, are not greatly considered when their release is granted. They are permitted to go out into the world; to marry, or to resume their former marriage ties, as it may happen. Reproduction takes place, and perhaps, even before the birth of the child, they are again brought back to the hospital because of the recurrence of a similar attack. Such cases are frequently seen, and the question arises, "what are the chances for the future of a child born under such circumstances as these"? My own conviction is that there is probably grave danger that just one more defective has been added to the great army of unfortunates who burden society, and for whom existence may prove to be only a curse. The same state of affairs often occurs, also, in many cases not recovered, but considered sufficiently improved to be entitled to a trial outside the hospital.

The law should provide that patients of the types mentioned should be given their choice, either to remain within the institution, or to allow themselves, before their release, to be incapacitated for reproduction. Such a law, properly carried out, would lessen a vast amount of misery. It should also be enforced within institutions for the feeble-minded and epileptic. The hopeless delinquent in our penal and reform institutions, as well, should be subjected to the same procedure, before he is allowed his liberty.

Like very often begets like, and we cannot hope to diminish the number of the insane until we adopt measures which will interfere with their production. Those unfit to become parents, to whom the production of sane and healthy offspring is an impossibility, should be educated upon these subjects, if they are susceptible to education, and their marriage should be forbidden. Those beyond the reach of education, should be rendered incapable of propagation; for whoever comes into close contact with the mentally defective and delinquent, through study and association, cannot but become aware of the existence of many hopeless creatures upon whom education and advice are worse than wasted. Capable only of responding to the animal instincts, they live but to gratify their desires. For them, marriage restrictions of any kind would be of no avail, and the only remedy capable of affecting a diminution of their kind is to be found in the proper use of the surgeons' knife. If this remedy is not fearlessly applied, the defective and delinquent of illegitimate birth also will soon outnumber the defective and delinquent born in wedlock. Operations for partial resection of the vas deferens and the fallopian tubes should lawfully occupy a most important place in our institutions for defectives and delinquents, and should be rightly recognized as the only sure prophylactic method possible under these conditions.

The preservation of the physical health and the removal of all foci of irritation in those who are predisposed are points of utmost importance in the prevention of insanity. There is probably no branch of our profession in which a wide knowledge of general medicine is more essential, than in that which treats of the disorders attacking the mind. It is still

to be determined just how defects of a physical character may, at times, influence the brain and its function.

The metabolism of the nervous tissues is as yet but little understood and therefore the possibility of faulty metabolism being an important factor in the production of various insanities is a point which should not be overlooked. Perhaps some day the causes of the many so-called auto-intoxications, or autogenic poisons and their effect on the nervous system will have a more definite explanation and this may help considerably in the prevention and treatment of insanity. How much the products of retrograde metabolism and their retention in the system are the cause and how much the effect of neuropathic and psychopathic states is still an open question. There is surely room for a vast amount of research in this particular field.

We must not forget that there are certain critical periods in the lives of the susceptible when the dangers of mental breakdown are particularly prone to arise and when the physical health should be especially guarded. I refer to the physiologic epochs, such as adolescence and puberty, the puerperium, the menopause and the senium. At these times special precautions should be taken to protect the health, and every possible factor productive of worry or mental strain should be eliminated.

Experience has taught me that in the state hospitals for the insane there can be given, with much benefit to the patients, a certain amount of instruction as to the means of preventing the recurrence of attacks. This instruction is naturally for those of sufficient mentality to comprehend its import and is practically intended for the convalescent; those expecting, sooner or later, to leave the institution. For some time past I have given a short lecture course to the patients for the purpose of explaining a few of the ordinary laws of health. They are advised how to care for their bodies and are made to understand in what way neglect of health and excesses of various kinds may become responsible for a return of insanity. At the same time proper advice is also given regarding their relations to society and their conduct as citizens. The danger of bad behavior, such as loss of temper, threatened violence, etc., is pointed out. Lectures of this kind not alone teach them simple means for the preservation of health and what their behavior and deportment toward society should be upon their release, but have also a wholesome effect upon order and health within the institution. Some two years of this kind of prophylactic work has convinced me that there is value in it.

In taking up the topic of treatment I will restrict myself to a brief description of methods which I have found of value during my service within the institutions of this state.

The care of the insane in the hospitals of Illinois has undergone a decided revolution within recent times. Not many years ago Illinois, like many of the states to-day, had practically nothing to offer these unfortunate wards but custodial care. In later years, however, under a progressive state government, administrative and advisory boards and commissions have been created, composed of men of the broadest intelligence and actuated by the spirit of advancement. Under their guidance the

charitable institutions of our state have gradually attained a higher standard of efficiency. Instead of places of detention where the mentally afflicted were confined for the protection of themselves and of society and to be fed and clothed, the state now conducts hospitals in the fullest sense of the word whereby both society and the patient receive adequate protection, and where the best hospital methods and all available means are employed to assist Nature in restoring these unfortunates to health.

None but men of special fitness and merit are selected as the heads of our institutions.

The medical departments are being carefully organized and are scientifically conducted. The civil service is doing its best to select none but the most competent for its eligible list. This does not apply alone to the medical officers but to the employees of all other departments as well.

In a psychopathic institute supported by the state, the state hospital physicians receive such education as will make them proficient in the care and treatment of the insane. This department is under the direction of a man who is an expert in this special branch of medicine. Modern laboratories have been placed in the institutions and a complete and uniform system of physical and mental examination and classification is enforced. The introduction of the trained nurse and of the training school, have contributed largely to the care and comfort of the patients. Special hospital buildings have been constructed for the treatment of the physically sick. They are furnished with all necessary modern appliances. Departments for the use of hydrotherapy and massage are now found in the various institutions, and on the whole much has been done to convert the Illinois state institutions from lunatic asylums, so-called, into hospitals for the treatment of the mentally sick.

In the modern treatment of the insane the broadest possible principles should be applied. It is well to look on every new admission to the insane hospital as a person whose health is generally impaired. A thorough examination of every patient is, of course, imperative before any logical treatment in the individual case can be instituted, for a complete understanding of the individual's physical as well as mental makeup, both of the past and present, is most important. The laboratory can be made a most invaluable adjunct to the clinical work within the institutions.

We know that the cardiovascular system and the state of the blood, the organs of digestion, the general nutrition, the functions of elimination and metabolism, all have important bearing upon the well being of the nervous system. It is therefore very evident that all disorders of this nature should speedily be detected and removed in so far as the case permits.

In arranging the receiving service, which should be free and independent of the chronic departments of the insane hospital, it is essential that new patients should be carefully grouped, so that those who are quiet, clean and well behaved, will not be disturbed or imposed upon by the noisy and untidy classes. For this reason special apartments are necessary. It is often apparent that certain patients have an excellent influence over other patients, and through their companionship contribute

much towards the general well-being. Special rooms for use, when complete isolation is deemed advisable, should be found in every receiving service.

I have long since made it a rule to put every new patient to bed as soon as admitted. Rest in bed, reasonably enforced, does no harm in any case. It is of great value in many cases, especially in those of acute excitement and depression, as well as in the toxic and infection exhaustion group of psychoses. Bed treatment, when rationally used, is the one and only remedy which I find universally useful in the treatment of the insane. The psychic effect on the new comer of being placed in bed, waited upon by nurses, and of receiving medicinal or other treatment at stated times, is most beneficial. To those of sufficient mentality, the thought of being considered a sick person, and of receiving treatment such as the sick are accustomed to receive is in itself a re-assurance, because it helps to rob the patient of the cruel belief, so often entertained, that he is simply an outcast of society, an unsafe person; nothing more perhaps than a prisoner.

A commendable supplement to the bed treatment is the use of massage. Good results are obtained, and tissue metabolism is encouraged. Massage offers a substitute for the usual motions and activities of the body. This passive artificial exercise is particularly indicated when rest and bed treatment must be prolonged and nearly absolute. I have found it of the most value in the depressions, stupors, and neurasthenic states. Every institution should employ competent persons for the giving of massage, who, in turn, should teach the pupils of the training school, so that it should come into prominent and practical use.

Absolute bed treatment can be dispensed with for a part of the day, as the case progresses, and the patient may be permitted to remain out in the open, where there is an abundance of fresh air and sunlight. The greatest possible amount of out-door air and sunshine is as important in the treatment of insanity as in the treatment of most other diseases. This is certainly true of those cases who are convalescing from an acute attack. Sun rooms and large porches are most useful to the wards intended for the care of the acute cases. When the patient is able to leave his bed the greater part of the day should be spent out of doors. It frequently happens that the number of employees in state institutions is not sufficiently large to permit them to give the open-air treatment to the convalescing patients to the extent that may be desired. I have, for nearly two years, employed the following simple but effective method to overcome this difficulty, with almost uniform success. I divide the convalescent patients of the receiving wards into groups of five and six, designating such patients as companions as seem helpful to each other. As soon as a patient is sufficiently convalescent, which, in acute cases in my service, means the time when the bed treatment is dispensed with, he is placed in one of these groups. He promises, in the presence of the other patients, and on his honor as a man, not to make any attempt to leave the institution without the knowledge and consent of the officials. He also promises faithfully to do his best to prevent the others in his

party from breaking any part of their obligation. These parties are then permitted to go about the hospital grounds without the care of nurses or attendants. The patient is thus afforded an opportunity to spend the greater part of the day in the fresh air. He is expected, however, to be on the ward for a short time when the rounds of the physicians are due, and in time for meals and retiring. I have found that practically all of these convalescents appreciate that they are trusted. They seem to realize that they are put upon their honor and that each one is, in a measure, responsible for the deportment of the others in the party. They are encouraged and cheered by this sign of trust, and I have found this system a better protection, in many ways, than with the usual accompaniment of attendants and nurses. The psychic effect is also wholesome and healthful. The question is often asked, "How many escapes occur with this method in vogue"? and I am justified in saying that there are practically none. In some four hundred convalescent receiving ward cases treated in this manner, I had some two or three attempted escapes, while the open air treatment, which is thus given to a maximum extent, exerts an immense influence for good.

Phototherapy or treatment by light transmitted in various colors, and the use of special color effects in the surroundings of the patients, have been recommended in this, as well as in European countries, as a means of help in the treatment of the insane. Some of the advocates of this form of therapy have been remarkably enthusiastic. The claim is advanced that certain colors have a soothing and calming effect upon the nervous system. The different shades of blue and violet are the most prominent colors employed for this purpose. Others are apt to increase psycho motor activity and restlessness, red being a prominent example. I fitted up one of the receiving wards with a color scheme, as an experiment, dividing the ward into departments, and using the colors most recommended, namely: red, blue and green. After eighteen months of careful observation, I have come to the conclusion that the color treatment does no harm if the depressed are restricted to the red surroundings, the mildly excited to the blue or green, and the badly excited to the blue or violet, but that there is but very little real value in it. The only value which I have noticed was in the use of the blue or violet shades for the maniacal types. Most of these seem to get along better, and are more comfortable in blue surroundings. In summing up my experiences in some three hundred cases I feel that in my hands color schemes and color lights have proven fairly negative of result, excepting in the use of blue or violet. Departments intended for the acutely maniacal could be made more useful, perhaps, by fitting them out in blue, with window lights, electric globes, walls, ceilings, etc., to correspond.

Psychotherapy, or so-called mental treatment, doubtlessly has application in the care of the mentally afflicted, and its benefits are many when supplied in the form of wholesome environment. The psychic effect of the surroundings upon newly admitted patients is of great importance. The receiving ward should be made as pleasant and homelike as possible. Everything that will reassure and encourage a patient and take away the

appearance of custody, is beneficial, but care should be taken to keep within the bounds of safety. The selection of pleasing furnishings, such as rugs, draperies, flowers, etc., are points worthy of consideration as a means of psychic influence.

Ways and means should be liberally supplied to furnish amusement and diversion for the convalescent of the acute type. Books, games, billiard rooms, etc., are of service in the wards occupied by the acute cases.

The personnel of those in charge of the receiving wards, including physicians, nurses, and attendants, should be selected with great care, for much depends upon the personality of those who administer the treatment. It is surprising how one person with tact and personal magnetism will control a given patient where others have utterly failed. When the confidence of the patient is gained the way is often plain. If a newly admitted patient is open to suggestion, he should be told why he came, and the real purpose of his confinement. He should be impressed and encouraged by the belief that he is there for conscientious care and treatment, and should be made to feel that the chief object of all is to help him back to the ways of health. He should be kindly but firmly told what is expected of him, what his conduct should be, and in what manner he may assist in his recovery. Kind, but firm, discipline should be used in the control of all patients.

I firmly believe that the use of drugs should be limited to conditions which offer real indications. I have been in the habit, however, as a matter of psychic treatment of giving every new comer, for a number of weeks, some kind of medicine, frequently only a placebo in the form of a simple tonic. People in general still believe that medicine is a necessary part of the treatment of disease, and I see no reason why they should be disappointed in this desire. Medication for the insane requires that the amount used should be reduced to a minimum, just as in the treatment of general diseases. Medicinal agents, however, are required at times, and of these the hypnotic class are perhaps worthy of first consideration. It is well to remember though that to-day the need of hypnotics is not nearly so urgent as in former years, for hydrotherapy has done much to lessen its employment. Hypnotic drugs should be avoided whenever possible, for we know that practically all of them are apt to produce detrimental effects when their use is prolonged. Many of them interfere with the secretions of the body, and we know how necessary proper elimination is in the acute cases. The unpleasant cumulative effects of these drugs, their injurious influence upon the circulation, as well as the danger of addition, should be continually kept in mind: I believe, however, that hypnotics have a proper place in the treatment of insanity, and are valuable if used with care and judicious supervision.

Increase of psychomotor activity of a most distressing and exhausting character is often observed and at times does not seem to respond to hydrotherapy. In such cases the careful use of hyoscin is of value and much exhaustion may be spared the patient by its proper use, though the

depressing effect which this drug exercises upon the heart must not be forgotten.

Opium and its preparations are of aid in psychopathic states accompanied by much anxiety and agitation. I consider the opium preparations otherwise injurious in the treatment of insanity, because of their interference with the functions of elimination.

The bromids are especially useful in the epileptic psychoses, and in mental disorders in which it is desirable to allay cerebral activity and irritability of a reflex character. The need of an anti-aphrodisiac is not infrequent, and as such the bromids serve a useful purpose. The cumulative effect of bromids and the danger of bromid toxemia are, of course, to be avoided. Chloral often induces restful sleep when other methods have failed, especially where there are hallucinations of a troublesome character. The rectal use of chloral is at times a most convenient method. The danger of chloral as a heart poison should be noted. Paraldehyd is a very useful hypnotic, and fairly safe. Its disagreeable taste probably interferes with its more liberal employment. Paraldehyd will often produce a happy effect in many stubborn cases of insomnia, where other measures have proved of no avail. I have used trional and sulphonal to a moderate degree. The sleep produced by these agents is usually refreshing, but their prolonged use may produce states of toxemia.

Drugs of the hypnotic and narcotic group have a place in the treatment of the insane only in cases in which, after faithful trial, other methods have failed, and where the necessity of rest is imperative, because of the danger of exhaustion.

The question of elimination is always an important consideration in the treatment of acute cases of insanity, and drugs which stimulate elimination, through the various avenues provided by nature are often of great value. The building up of the general strength and of the condition of the blood, the proper attention to the digestive system and the guarding of the cardio vascular system, are all points of importance and should receive such treatment, including medication as is ordinarily considered proper.

There has been much discussion, pro and con, as to the advisability of surgical operations upon the insane. Personally, I can see no reason why capable and honest surgery should not bear the same relation to the insane as to the sane. It appears that whenever there is in the insane a well-established indication for surgical interference, the same should be promptly carried out. The removal of all foci of irritation is certainly to be desired, and surgery is often the only resource.

It is an undeniable fact that in the supposedly sane an outbreak of insanity occasionally follows the performance of major surgical operations with their prolonged anesthesia. Such cases are not frequent, however, and are usually transient in character. I cannot see why their occurrence should indicate that the beneficent results attendant upon the judicious use of surgery should be altogether dispensed with. My own experience in surgical work among the insane has, on the whole, been satisfactory.

I have operated whenever I have been convinced that the indications were actually present, and have seen considerable resulting good.

Hydrotherapy, one of the most valuable of all measures in the treatment of insanity, is now liberally used within the institutions of the state. Modern hydrotherapeutic departments have been installed, and the results obtained are gratifying. The use of water in the form of baths, packs, sprays, etc., in the treatment of mental disease, is not a new idea. For years it has been recognized as a useful therapeutic agent in the insane hospitals of the old countries. In this country it is within limited years that it has come into use to any extent; in Illinois, quite recently.

Physicians engaged in the care of the insane should realize that the equipment of an institution is incomplete without a modern hydrotherapeutic department. Hydrotherapy is not a cureall, by any means. There is no remedy used in the treatment of mental disease that will reach every case, but it is without doubt of decided value when rationally employed. Hydrotherapy has brought about a decided decrease in the use of all kinds of restraint. It has made the use of hypnotic and narcotic drugs unnecessary in a great many cases. It is of much value in assisting the functions of elimination. In some of its special forms it is also valuable as a stimulant to the nervous system. Warm continuous baths and hot, neutral, or cold packs are very useful on account of their sedative effect. Stubborn and distressing insomnia often can be overcome by these measures. Mechanical, manual, and medicinal restraint are frequently made unnecessary. Many times the periods of maniacal excitement are much lessened in duration by the use of these agencies. The pack is a very convenient measure, as it is readily used without the necessity of removing the patient from bed, and, if skillfully applied, serves as a convenient restraint to the excited and restless patient, until its sedative effect is experienced. The hot pack, the Russian, Turkish, and electric-light baths are all excellent to stimulate elimination, and are beneficial in the toxic states. In the use of heat, however, one must never forget the possible danger of cardiac depression. For this reason all forms of hot baths and packs should be given under the careful supervision of a competent person, and the physician should have an intelligent understanding of the cardiovascular system of the patient, before the hot bath, in any form, is ordered. The different forms of cold sprays and douches have stimulating effect, and are usually of value following the hot bath. They are also beneficial in the stupid and depressed states, if used with care and for brief periods. The most and the real value of hydrotherapeutic measures are found, however, in the use of the packs and baths intended for sedative and eliminative effect.

The diet of the acute insane is an important part of the treatment, and it should be adapted to the physical needs and ailments of the patients. Light and nutritious diet is generally in order in the average acute cases. The digestion, in the greater part of the acute psychoses, is more or less weakened, and therefore light foods are indicated. We hear much discussion of the so-called "over feeding" in the treatment of the acute insane, just as in the care of the tubercular. This overfeeding

is at times a very harmful procedure. The patient's digestive powers must be first ascertained as we are apt to increase an already existing toxemia due to fermentation and putrefactive changes within the gastro-intestinal tract. The maximum amount of easily digested, nutritious food, consistent with the patient's power of assimilation, ought to be the proper conception of a full diet. Milk, eggs, light cereals, puddings, fruits, light vegetables and occasionally some well cooked meats, are the foods best adapted to the needs of the acutely insane. A liberal quantity of water is most essential, and the nurses in charge should have specific instructions to give the acute cases sufficient amounts of water at regular intervals. The diet can be gradually increased as convalescence begins.

A diet nutritious but not too heavy is preferable for the chronically insane and the quantity and kind of food should be gaged, more or less, by the daily amount of physical exertion and exercise of the patient. Those assisting in the labor of the institution should receive a larger allowance of meats than the ones doing but little manual work. The diet of the epileptic insane should be especially watched with the view of preventing gastro-intestinal putrefaction. It should be a routine task of all wards to make careful note, at stated intervals, of each patient's weight, as this gives valuable insight regarding the state of nutrition.

One of the most troublesome conditions occasionally arising in the care of patients of the acute type is the refusal of food. At times it becomes necessary to resort to artificial means to prevent serious exhaustion or even starvation. For this purpose the feeding tube should be judiciously employed. Often, with tact and perseverance, patients can be induced to take food who have stubbornly refused, but there are times when no amount of persuasion is successful. It is well to give the patient a reasonable amount of time to decide upon taking nourishment, but it is not safe to wait too long. In newly admitted cases one must always take into consideration how long before admission the patient has been without any, or insufficient, food, and it may be necessary to use the tube immediately. The usual foods employed in tube feeding, milk and eggs, should be given not less than twice a day. A moderate amount of sugar, salt, beef juice, and such medicines, artificial digestants, etc., as are necessary, may be added to each feeding. In artificial feeding there is the danger of an occasional fatal collapse, for example, should a patient be permitted to struggle violently when afflicted with a weak heart. It is always well to have plenty of assistance at such a time, in order to prevent unnecessary struggling. The administration of a mild hypnotic prior to tube feeding may be needful to prevent unusual exertion on the part of the patient. The occurrence of asphyxiation due to the entrance of food into the air passages must of course be guarded against.

We realize that mechanical restraint has been greatly abused in years gone by and while its use in the institutions for the insane in this state has been much reduced, as I have already mentioned, the ideal condition, naturally, would be one in which mechanical restraint could be entirely dispensed with. For my own part, however, I have not yet reached the conclusion that this is altogether attainable. The state is apparently

not able to supply enough help to meet the requirements of ideal conditions, and even though a sufficient number of attendants and nurses could be assured, there would still remain cases, in my opinion, in which mechanical restraint of some kind would be a necessary evil. There are times when hydrotherapy will not have the desired effect in subduing excitement; when the constant activity of the patient may produce serious exhaustion; and when the use of narcotic drugs, on account of special contra-conditions, are dangerous. At such times the hands of the employee only invite additional struggle and I have found the bed strap of great assistance in these cases in keeping the patient in bed and under better control and supervision. It facilitates the carrying out of the general treatment, and prevents exhaustion. The patient does not suffer any discomfort; on the contrary, I believe that restraint in bed, properly applied, and under the supervision of the physician in charge, adds to the patient's comfort. The only time at which I find it necessary to use mechanical restraint is to keep those patients in bed who are in absolute need of bed treatment, and who cannot be safely kept there by any other means. Above all, it should be remembered that this form of restraint should be strictly under medical supervision, and should be used only when there are distinct indications of its necessity.

Just a few words regarding the care of the chronic types among the insane. Every institution has many of these cases, and, on the surface, it may appear that but little can be done for them excepting as regards their general comfort, such as protection, housing, feeding, etc. This is far from the truth, however, for there is much that can be done to make their lives more endurable and useful; much that will improve their mental state and lessen the speed with which the deterioration of the mind progresses. Suitable occupation, handicraft, and other means of re-education, as well as amusements, music, and entertainment of various kinds should be faithfully and systematically employed, with this object in view. Many patients apparently in the advanced states of dementia, with patience and perseverance, can be gradually awakened from their condition of mental lethargy and brought back to a life of comparative usefulness. Some even improve to such an extent as permits of a return to their homes.

Institutions should possess ample teaching facilities. The various industrial departments, the farms, gardens, etc., should be used to the fullest extent. The wards should be liberally supplied with the means necessary to furnish mental employment of many kinds. The occupation of the insane requires careful study and supervision. The work should be graded, and should be directed in accordance with the degree of intellect evinced by the respective patients. Personally, I believe that calisthenics are of much value as a convenient method of re-education, to say nothing of the physical benefits derived therefrom. They act as a means of arousing the dormant mind, preparatory to the performance of some form of practical occupation. A few months of regular attendance upon systematic calisthenic drills will, in many cases, restore a patient to a fair degree of usefulness. In some instances even those who for years

have been living a vegetating form of existence, are thus often enabled to perform some of the simpler tasks about the institution. It is a fact, however, that the success of occupational and re-educational work among the chronic insane depends largely, and I have otherwise called attention to this same point, upon the tact and personal qualifications of those in charge.

In conclusion I wish to emphasize the urgent need of early treatment in all cases of insanity. It is best that the patient be at once placed in a proper institution. The general practitioner should be able to more readily detect insanity in its incipency and should vigorously enforce the necessary measures for immediate treatment, for it is an undeniable fact that the sooner systematic treatment is begun the better are the chances for recovery. The existence of a sufficient number of psychopathic hospitals should be assured, where the sufferer may receive adequate treatment and observation prior to a formal commitment by the court to a regular insane hospital or sanatorium. This final measure may not be necessary in many cases and the patient is thus saved much possible embarrassment.

THE STUDY OF MENTAL DISORDERS.*

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My purpose in this paper is to place before you something of the developments which have taken place in the study of psychiatry with the hope of arousing a wider interest in the subject in the medical profession generally, by showing that advances are really being made, together with a realization of its great medical importance, and at the same time to call your attention to the need for wider recognition and better teaching facilities, especially of a clinical character, in our universities and medical schools. In doing this it seems well to cast a cursory glance over the history of the subject in order to follow its gradual evolution.

Prior to the seventeenth century one may simply state that with but few exceptions the views which were held consisted of belief in the supernatural character of all insanity. Toward the end of this century, largely owing to the enlightenment resulting from the work of the great pathologist Morgagni, there began to appear a definite transition from pure superstition to objective study of the patient. But little, however, was accomplished before the end of the eighteenth century, when there began to be established definite schools of psychiatry. In 1775 Cullen, in England, making use of the work of Locke, formulated a system of psychiatry which was largely free from superstition, and also began the advocacy of humane treatment of insane persons as being sick people. The next quarter of a century saw this movement much more firmly established as regards the manner of handling the insane, and

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with this is inseparably linked the name of Pinel at the Bicêtre Hospital in Paris. He was preceded in Italy by Chiaruggi and was a contemporary in the same work of William Tuke at the Quakers Hospital in York, England. In this country, though somewhat later, a similar movement was begun, largely through the efforts of Dr. Rush. The first real advance, however, in the study of psychiatry, as a branch of clinical medicine, dates from the work of Griesinger, who published a text-book on the subject in 1845. The immense importance of this work lay in the emphasis which its author placed upon the clinical study of cases with careful records of the facts observed which had up to this time been almost entirely neglected. He also probably struck the final blow which demolished supernatural beliefs and firmly established the recognition of mental disorders as properly belonging to medical science. This work of Griesinger was ably carried on and elaborated by his pupil, Krafft-Ebing, whose text-book, still one of the standards in use, was published first in 1879. Like his teacher, he paid strictest attention to clinical phenomena, making careful records of complete life histories, and was one of the first to teach the importance of such prolonged studies, and the emptiness of mere names for purposes of classification. Meanwhile another mile stone is represented by the work of Morel whose doctrines on degeneracy were published in 1857 and have formed the basis of an enormous quantity of later work which has served to modify and limit the somewhat dogmatic views of its author. The great importance of this work lies in the firmer establishment of the relationship between insanity and somatic conditions, and it may be considered as representing the opposite extreme to the supernatural views which had obtained for so long, and the foundation of a material determinism. There can be no question, however, that these doctrines go too far. Morel even formulates a law concerning the changes which occur from generation to generation as degeneracy progresses. In the first he mentions nervous temperaments, moral inadequacy, intemperance. In the second tendencies to apoplexy, severe neuroses and alcoholism. In the third psychic disorders, suicide, mental incapacity. In the fourth congenital defects, malformations and faulty development. These doctrines were modified by the Italian school of Lombroso, which ascribed the degeneracy to a form of atavism, and gave excellent descriptions of the various stigmata which indicated this atavistic tendency.

In more recent times we find that the development of the study of psychiatry has evolved mainly along psychologic lines, and of the schools which require especial mention, those of Kraepelin, Wernicke and Ziehen stand out prominently. Kraepelin has largely continued the work of Krafft-Ebing in the clinical study of cases over long periods of time which may be described as the investigation of a longitudinal section of the disorders, as opposed to the transverse section of most other writers, and he has employed with great profit, in analyzing the material which he has collected, the results of his excellent studies upon experimental intoxications. Wernicke developed the subject along somewhat different lines, depending upon the fact that his interests had centered chiefly in

neurologic problems, with the result that we find an attempt to study more especially the anatomic localization of the disease process in the brain which gives rise to the disorder in its function indicated by the clinical symptoms. Both these authors emphasize especially the need for the study of clinical symptoms with faithful records of the facts without regard to any preconceived notions resulting from the classification in vogue as to what ought or ought not to be present in the particular case. The results have been the tearing down of ancient barriers which had been erected to separate and forcibly restrain time-honored disease groups, and Kraepelin especially has shown that the most obvious are not by any means consequently the most important symptoms, just as had to be done in general medicine when for example the group consumption gave place to tuberculosis and the other disorders in which progressive emaciation is a prominent feature. The particular method of analysis of the symptoms employed by the two schools really supplement one another, and each represents a very decided advance over the vague and ill-defined modes previously employed. Ziehen has evolved a psychology which represents a considerable step forward in that he tries to eliminate all metaphysical inclusions and to place the subject on a purely physico-physiologic basis. In studying cases of insanity he does so from the point of view of this psychology, attempting to localize the symptoms as disturbances in some part of his schema.

The most modern advances in the study of psychiatry depend upon the broader and more scientific conception of mind which has been evolved as the result of all this previous work and in the promotion of which stand out preeminently certain names: Charecot and Janet in France, Freud in Vienna, Bleuler and Jung in Zurich, Adolf Meyer, Morton Prince and many others in this country. According to this conception mind may be defined as the most complex and most highly specialized means of adaptation to the environment. In other words it is a means of rendering possible wider and better selection of the reaction which will occur in response to a stimulus and thus of rendering the individual better able to cope with the complexity of the surroundings in which he struggles for existence. As can readily be seen, this means a complete surrender of all metaphysical views and places psychology in its proper place in the scale of biologic evolution. It does away altogether with any appeal to a separate will or soul, and regards voluntary actions as only more highly specialized examples of reflex action. It means that as scientists we can no longer accept disturbances of will or emotion as causes of any abnormality in conduct or action, and compels us to seek for some interference with the conductivity or irritability of the nerve pathways. Mental processes have been evolved from the simple reflex under the one universal law which governs all biologic improvement, that of survival of the fittest, according to which the individual best able to adapt himself to his environment is most liable to survive and reproduce his kind. We have to realize that an insane person is not one who has a new kind of mind following new laws, but that he has some interference with the physical mechanism of his brain which results in disorder of its

function. It still works on exactly the same principles as obtain in health in so far as the necessary mechanisms are still operative. There does not develop a new manner of adaptation, but the patient adapts himself to the best advantage of which he is capable with the existing state of his brain, on precisely the same principles as formerly.

The immense importance of this conception at once becomes obvious, if one considers the manner in which mental adaptation is developed. Every individual is born with a brain possessing more or less well arranged anatomic systems depending upon heredity concerning which we cannot at present say much that is definite. Unquestionably the basis of truth underlying Morel's doctrines of degeneracy will apply in this place; but the question of paramount importance in the determination of the type of personality or the character of the individual, that is to say his capacity for adapting himself to his environment and meeting the difficulties of life, lies in the surroundings in which he grows up and the education he so receives, and this is true especially in his earliest years. In this lies the most hopeful outlook for psychiatry, because here conditions are more readily open to variation and improvement. The question of heredity is one much less accessible to direction, although even this branch is being widely considered and a society for the study of eugenics has been in existence in England for some time.

These views have been largely the result of careful analytical study of the psychoneuroses, and it has been proved beyond doubt that the symptoms presented in these disorders are produced on exactly the same basis of adaptation to environment which obtains in ordinary conduct. The hysterical symptom is merely the mode of adaptation to an unpleasant and conflicting situation resulting from the individual's inherited brain mechanism and the education he has received. It is the manner of facing some difficult situation which heredity and previous training have rendered possible for him.

Special methods of analyzing the symptoms permit of the discovery of the particular maladjustments present in these cases, and the relation between them of cause and effect is demonstrated by the full and complete recovery which results from reeducation, which is the fundamental principle of all psychotherapy, and by which one means that the individual is taught to adapt himself more satisfactorily.

Similar principles of psychologic analysis are being used, although they are far more difficult of application, in the study of the various forms of psychosis with the result that we find in many cases an exactly similar mechanism at work and this discovery has led to a far better understanding of the significance and manner of origin of many symptoms occurring among the insane. That is to say, we are finding in many psychoses there has been some more or less definite psychic conflict in which the individual meets with conditions in his environment for which his makeup and education have not prepared him, with the consequence that the mechanism at hand is insufficient to the occasion, and there results a disorder in function. If it achieved nothing more than this the time and labor expended in the effort would be repaid because it means

better insight into the reasons for a patient's actions and conduct and consequently a better ability to deal with them with tact and understanding. But far more than this it opens up the possibility of establishing psychiatry upon a firm basis as a branch of preventive medicine, in which direction all our hopes must lie. The vast improvements in the methods of treatment of the insane unquestionably do much to improve the chances of recovery, to diminish the amount of wreckage and to shorten the duration of the disability in recoverable cases but still leave much to be desired in the way of widening the limits of possible recoveries. Consequently anything which holds out any hope of recognizing the actual causes and the mode of their action in causing mental alienation deserves the very closest attention. Already some preliminary steps in this direction have been taken in a study of the psychologic types of individuals suffering from various forms of psychosis which suggest the possibility of recognizing these persons at an early age when prophylactic measures could be instituted. This work has been started by Dr. August Hoch, director of the New York State Pathological Institute. But the subject is still in its infancy and there is necessary a vast amount of difficult and onerous work among normal individuals as well as among the insane and psychoneurotics. It implies careful analytical consideration of the manner of reaction to various kinds of surroundings during the earlier life of patients as well as after the onset of psychosis. To be able to do this means that we must be able to get at the facts of the past life of our patients, and it is here that we need the assistance of the medical practitioner acquainted with psychology, who knows the family and has had opportunities to observe the patient. We need to know the conditions under which the individual has lived and been educated (a term which of course means much more than the school to which he has been).

It may here be objected, as is often done, that psychologic difficulties cannot be the cause of psychosis as opposed to neurosis. This may or may not be true but as Adolf Meyer well says,¹ "Where these facts *exist* we should use *them* rather than wholly hypothetical poisons." Of course it must be understood that I do not mean to deny the influence and importance of somatic factors such as organic brain disease, specific fevers, alcohol, etc., in which there is more or less definite interference with the brain or its nutrition. An immense field for further study lies in the investigation of intoxications and disorders of metabolism even among the so-called functional psychoses, and much work has and is being done along these lines as well as upon pathologic anatomy, although so far without the demonstration of much that is definite. In this connection I would call your attention to the fact that even should such metabolic and toxic disturbances finally be demonstrated it will not necessarily detract from the importance of the psychologic conditions, because in adapting oneself to the environment the organism is adjusted as a whole, including the secretory organs and the involuntary muscle system, under which heading comes the cardio-vascular apparatus, etc.

1. The Rôle of the Mental Factors in Psychiatry, Am. Jour. Insan., lxx, 42.

What we speak of as emotion would appear to be the state of consciousness which corresponds largely to the motor and secretory adjustment. Pleasant moods and feelings of satisfaction accompany adequate adjustment, while depression and perplexity would be the expression of faulty or inadequate means of adaptation. Hence it may well be that the occurrence of some conflicting environment with its disturbing moods and effects which, as just stated, means widespread muscular, vascular and secretory disturbance may by reason of the conflict give rise to disturbances in metabolism capable of perpetuating themselves.

However this may be, we remain well within the facts when we consider as demonstrated that the psychologic factors play a very large part in the etiology of the functional psychoses and, as may be added, also in the developments which occur in psychoses associated with definite somatic etiologic factors. To say this, is only to say that our means of adaptation may be insufficient to cope with the difficulties of our surroundings, or in other words that traumatism may be psychic as well as physical.

It would be impossible in the scope of such a paper as this to give an adequate conception of the advances which have been made but enough has been said to show that psychology and psychiatry have assumed practical importance as well as academic interest and are no longer hopelessly mythical and scientifically unintelligible.

It is unnecessary for me here to enter into any consideration of statistical data concerning the number of insane persons or the great importance of their care from an economic and sociologic point of view, and I turn to the question of practical importance to us as physicians with which I started. Even apart from cases of insanity, a knowledge of psychology is of the utmost importance to every physician. Psychotherapy is coming to be recognized as of paramount value in the treatment of many of the patients one meets in every day practice, and to use this properly a knowledge of the psychologic principles underlying it is obviously essential.

Cases of mental disorder come first into the care of the general practitioner, and he must be able to recognize them early and handle them properly if the patient is to be placed under treatment sufficiently early to avoid damage which may be irreparable. There can be no question that many cases become more seriously damaged owing to failure to recognize the conditions early. I know from experience that a patient is often made far worse and rendered inaccessible to later treatment by a failure on the part of those in whose care he is during the early stages to recognize the nature and meaning of the disturbances in conduct and actions.

Education of the popular mind to the proper views of insanity, to the needs for care in the surroundings of young children, for the regulation of school life and the selection of occupation and even in respect to the advisability of marriage must soon be recognized as duties of the physician.

Without considering questions of forensic importance I have said enough I think to convince you that the subjects of psychiatry and psychology are essential to every physician, and yet the teaching of them is almost limited to didactic work. Very many men graduate as physicians without having seen a single case of mental disorder. That this cry is not new is seen by a passage from the first edition of Griesinger's textbook, 1845, which I quote from a paper, by Dr. Clarence B. Farrar:²

The neglect of psychiatry among physicians and particularly in the universities, shows daily its unhappy consequences. They appear in the diagnosis and treatment of fresh cases on the part of practitioners, to whose care the mentally ill are entrusted often long before they are brought to the alienist in the hospital. Still more conspicuous are these effects in the forensic activities of physicians.

In the preface to the second edition of this book in 1861 Griesinger writes:

Even now this faculty in the universities is pushed very much into the background, and clinical teaching especially is practically never organized or recognized in accordance with the importance of the subject. . . . The importance of this is so obvious that I live in hopes that soon there will be created regular psychiatric clinics. Only so can the purely medical comprehension of mental diseases, together with the study of morbid mental phenomena attain proper general dissemination, and at the same time render possible the production of physicians who are alienists, and not merely asylum administrators.

DISCUSSION ON PAPERS OF DRs. COHN AND SINGER.

Dr. Frank P. Norbury, Hospital:—Last year when I suggested to the section officers that it would be well to have a symposium on mental diseases, I had in mind just such a symposium as we have had presented to us to-day, the purpose of which is not only to start, but to keep up a campaign of education regarding mental disorders.

We are much in need of such a campaign, not only for the benefit of the medical profession, but for the people as well. For several years we have maintained such a campaign in the State Charities Association, with the hope of reaching the people and the medical profession along the lines suggested here to-day.

Somehow, from a medical standpoint, mental diseases have not received their due from the practitioners at large, who, too unfortunately, look upon mental disorders as being out of the line of the ordinary run of practice, and for this reason not worthy of much consideration. The consequence is, not only a lack of clinical knowledge of mental diseases, but a want of knowledge pertaining to the conditions which contribute to mental diseases, viz., the individual family life, environmental conditions and a study of the individual himself. The time has come when we should by all possible means endeavor to do something that will reach the individual, his family and reach the physicians who have his physical and mental welfare in hand. In other words, we must study etiology, the causes and conditions from which develop mental diseases. The problem involves not only the primary sociologic and economic conditions which enter into the daily life of the individual, but the secondary problems, found in housing of the people, family life, educational advantages, etc., which are a large part of the great problems of modern medicine considered in prevention of disease.

We may not all look at mental disease from this standpoint, but nevertheless such factors are true parts of the whole, and as a result the problem resolves itself into one of educational importance. To facilitate and promote the educational campaign, we should have opportunities for clinical teaching, where all of these several factors in etiology could be presented in a clinical analytical way to the medical student. Mental diseases must be studied by persistent and careful

2. Some Origins in Psychiatry, *Am. Jour. of Insan.*, lxxvi, 277.

analysis of all factors entering into each case. To this end, opportunities must be provided such as exist in but few states. Michigan in the West, Johns Hopkins in the East, are the two universities which have awakened to this pressing need. Indiana has ample clinical opportunities which are being utilized in clinical teaching.

Clinical teaching of psychiatry demands the presence of the patient with carefully prepared summary of all of the findings, analyzed so that all factors are presented to the student. The long range and absent treatment of a case, together with certain platitudes and clinical facts, hastily stated, which the student is asked to accept, are not methods of teaching calculated to arouse interest either in teacher or student in this field of clinical medicine. Perfunctory methods are obsolete in medicine as in other departments of science.

The experience which Dr. Singer has in the Psychopathic Institute, demonstrates the value of clinical methods of teaching medical men. The same methods should be used in our medical schools. Our present-day methods in most of our medical schools remind us of the nursery rhyme of the child who wished to go out to swim.

“Mother, may I go out to swim?

Yes, my little daughter.

Hang your clothes on a hickory limb,
But don't go near the water.”

Dr. Harold N. Moyer, Chicago:—I want to express my satisfaction with the paper that has been presented by Dr. Singer. I am sure he has put the question of mental diseases and their treatment before us in a very illuminating way. Any one who desires to enter the field of psychiatry would better study this paper carefully, as it shows us where to begin. Emphasis is laid on the unity of mental diseases; Dr. Singer makes no distinction between the man who is a little bit worried for fear something will happen to him and the man who is very insane. These psycho-neurotics are insane in a sense, but not so widely departed from the normal as the man who has lost sense of his position, location and proper functions in life; it is the same thing, only differing in degree. There is a practical side to this question, and I will ask, What have you done as individuals for the psycho-neurotics? Have you entered into any analysis of their mental state? You may have examined the throat and lungs, the heart, and so on, of these patients, but have you made an analysis of their mental condition? Have you not told them, “Take these pills, don't worry, and you will be all right?” Have you asked these patients why do they worry? That is the question. As a result this subject has been a stepchild of medicine, and a most neglected one. This overlooked field has been well cultivated by irregulars, and the present vogue of Eddyism and similar cults is chargeable to professional neglect. It is time that we, as medical men, should learn how to do it. It is a practical question, and one we ought to master not only for the benefit of our patients but for ourselves, because these patients ought to be cured and the only proper person to treat them is a medical man. (Applause.)

Dr. Eugen Coln, Anna (closing the discussion):—We should indeed realize the importance of educating the general practitioner to recognize insanity in its incipency, as we all know that the sooner insanity is treated the better is the chance for recovery. Occasionally I have been brought face to face with the fact that the general practitioner at times calls people insane who really do not belong to that category. I have seen a man in delirium from advanced lobar pneumonia brought to the insane hospital after being in a railroad car the greater part of a day sitting up in a day coach, who promptly died on the day following. I have seen a patient with typhoid fever of about three weeks' standing brought to the insane hospital in the height of delirium, only to suffer with hemorrhage of the bowels the day after admission and to die from this disease and the exposure of the trip. I have also seen a woman, delirious on account of a severe case of uremic poisoning who was admitted as a case of acute of mania with death following.

INSANITY.*

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Gentlemen:—It is not to be expected that we can cover the ground of insanity in one evening. It will be more profitable for us to dwell upon a few of the most important points than it will be to go over the whole subject in a very superficial way. Insanity is too big a subject and too important to be treated thus lightly. It is much bigger than many people think it is. I know a great many who think that the insane are housed and fed and turned out for exercise as so much live stock, and that physicians in institutions for the insane eat three square meals a day at the expense of the state, draw a comfortable salary and do not give very much in return. But the fact is, the man who does his duty in a place of that kind finds plenty to do all day and every day; always something interesting and many problems to solve.

Let us approach the study of insanity in a very elementary way. Let us pretend that we know nothing about it and begin in the a-b-c-class. You will pardon me, I am sure, when I say that there is no other branch of medicine about which so much confusion exists in the mind of the general practitioner as in this branch of mental diseases. At least there is no branch of such magnitude as this, and presenting such an abundance of clinical material, about which there is such a lack of knowledge.

This lack of knowledge is not the fault of the general practitioner. He has been a victim of circumstances. In the first place, it is only within recent years that our medical schools have given any practical lectures and clinics upon this subject; and in the next place, as soon as one is declared insane he is usually sent away promptly to an institution of some sort. Hence, the man in general practice has had little or no opportunity to become familiar with the different forms of insanity or follow them up in their clinical course.

Mental troubles are studied in the same systematic way as are diseases of any other part of the body. Insanity is a generic term. If you say one has heart disease you do not convey any definite meaning; but if you say one has aortic regurgitation or mitral stenosis, then you express something distinctive. So insanity has its classification or separation into the various psychoses, and these have their etiology, pathology (some of them have; not all have been demonstrated by any means)—diagnosis, prognosis and treatment.

We said we would be very elementary. Let us be reminded, therefore, that a neurosis and a psychosis are altogether different things. A neurosis is a disease of the nerve tissue, one of the four primary tissues of the body; a disease of the substance, of the mechanism. A psychosis is a disease (or perhaps it would be more to the point to say a perversion) of the highest function of that nerve tissue: of that intangible thing we

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call the mind. The study of such conditions is called psychiatry. The one who studies them is a psychiatrist or alienist.

Now you may find a neurosis and a psychosis existing in the same case, and they may be entirely independent of one another. On the other hand they may be inter-dependent upon the same pathology. This you will find in general paralysis of the insane and in ascending locomotor ataxia. Another good example of a mixed type is an insane epileptic hemiplegiac. Here you have a lesion producing destruction in a motor area, causing degeneration of a motor tract, bringing about a paralysis of the opposite side of the body. At the same time, motor centers in the immediate neighborhood of the lesion are not destroyed; they are irritated, so that at times there are explosions in the form of fits or convulsions. Also at the same time the psychic functions are disturbed.

What are psychoses? What is insanity? I never have seen a satisfactory definition of insanity. I presume that every one who has ever studied the subject has tried to compose one. I know I have. And every man who writes a text-book gives a definition, but you will notice that he always makes some sort of apology for it. Some of these definitions cover a whole page, others are expressed in a few sentences, others in a few words. None has been universally accepted. Suppose we try to formulate a definition and see what some of the stumbling blocks are. Very well. Let us begin by saying that insanity is that departure from the normal mental standard, and there we will have to stop because we do not know what the normal mental standard is. We know what a normal heart looks like, or a normal brain, or a normal kidney, or any other normal organ, but we never saw a mind.

Is there a standard? Is any man perfect in all of the mental attributes? Is he perfect in will power and judgment? Is his memory never at fault? Does he never make mistakes of any kind? Has he always perfect control of his emotions, his passions, his appetites? Is he not over-sensitive? Never unduly elated nor morbidly depressed? Does he never delude himself in any way? Does he always see and hear and interpret things just exactly as they are? Is his ego no larger than it ought to be? Is he properly altruistic, having those finer, higher, ethical feelings toward others he should have; or are his motives purely selfish? Is he not unreasonably suspicious? Never vindictive? Has he no mental twist of any kind; no moral stigmata?

And thus we might mention other attributes in our endeavor to paint the picture of a perfect mind. Did you ever run across such a thing? I never did, either inside or outside of an insane asylum; and while we are fond of demanding a hundred per cent. of efficiency (always from the other fellow), isn't it a fact that you and I get along with, let us say, about ninety per cent. of this and think we are doing pretty well? And does not that represent about the average man, and is not the average man a pretty sane sort of an individual? I think so. I should not wish you to think for a moment that I am one who believes that nearly everybody is on the border-line of insanity. I lived too many years among the insane to have any such notions. While you often hear it stated that the

barrier between sanity and insanity is a very frail sort of a thing, the same is true of the line between bodily health and disease; the man in perfect health at this hour may be stricken before morning.

This thing we call insanity is the departure from the normal standard of the individual; of the particular individual you have under examination. It is not fair to compare John Smith with John Brown. Compare John Smith's condition with what it was last week, or last month, or last year. His state of mind causing him to do and say things strange and unreasonable; out of keeping with his former self, or inconsistent with his present surroundings and circumstances. For example: If an ignorant roustabout should be picked up here on the levee, talking and acting in a strange manner, and you were called upon to inquire into his mental condition, and among other things he would tell you that he had ten thousand dollars in the bank, you would know it was either a lie or a delusion. But if you were called upon to examine a man worth a hundred thousand dollars, who also talked and acted strangely, and he stated that he had ten thousand dollars in the bank, you would not think it unreasonable.

Again, if you should do some of the things I do, people might think you crazy. And I can return the compliment; if I should adopt some of your ways they might think me "nuttty."

You see the point, therefore. The study, or rather the diagnosis of insanity narrows itself right down to the study of the individual, and there are no two cases precisely alike for the reason that no two minds are just alike.

Moreover, a definition of insanity must exclude such transitory conditions as the delirium of fevers and the acute intoxications from alcohol and other narcotics. It must also exclude idiocy, imbecility and feeble-mindedness, which are, of course, only different grades of the same thing: arrested mental development, either congenital or acquired.

There may be an insanity following any of these conditions. It may follow typhoid fever or other infection. It may follow the prolonged use of alcohol or other narcotic, or it may be superimposed upon an idiocy, imbecility or feeble-mindedness. That is to say, one may be an idiot or an insane idiot; an imbecile or an insane imbecile; a feeble-minded or an insane feeble-minded, which takes us back to the point stated a while ago: that it is the study of the individual, as an idiot may go along in his quiet, harmless and, with him, normal way for a number of years, then develop delusions, or become unmanageable, and we say he is an insane idiot.

Now I think you can see a few of the difficulties in the way of stating a brief, concise, clear, scientific definition of insanity and why it is that writers upon the subject always find it necessary to define their definitions, so to speak, and I shall not take up any more of your time with this question. It is not necessary, any more than it is necessary to define life or death. We know there are such things.

The classification of insanity has not been perfected. Some authorities have tried to base it upon symptomatology, others upon etiology,

and so on. Like the definition, no classification has been universally accepted. The present day classification is a mixture of etiology, pathology, symptomatology and psychology. I do not see how a pure classification can be made at the present time. When we know more about the pathology of insanity then we will know more about classification. In fact I believe that a rational classification must be based upon etiology and pathology. While there are many forms of insanity such as mania, melancholia, parietic dementia and others that present very characteristic groups of symptoms, there are still a great many that do not; they partake of many forms.

I present for your consideration two classifications. The first is for the alienist, but there is no law against your using it if you wish. While, as I said before, there are quite a number of classifications, the one you see before you is the one used very widely at the present time. It is a modification or amplification of Kraepelin.

CLASSIFICATION.

A. Disorders associated with more or less definite interference with the brain or its nutrition.

I. INFECTIVE EXHAUSTIVE GROUP.

Includes cases with this etiology not belonging to other groups.

Ia. ALLIED STATES.

Cases presenting a similar complex but without the etiologic factor.

II. INTOXICATION PSYCHOSES.

1. Alcoholic.

- a. Pathologic intoxication.
- b. Delirium tremens.
- c. Acute hallucinosis.
- d. Chronic alcoholism.
- e. Paranoiac states.

2. Polyneuritic (Korsakow). Nearly always alcoholic.

3. Drug and food toxicoses.

4. Thyreogenous. (Cretinism, myxedema, Graves' disease).

5. Glycosuria, eclampsia, etc.

III. PSYCHOSES ASSOCIATED WITH ORGANIC BRAIN DISEASE.

1. Diffuse and focal lesions such as gliosis, Huntington's chorea, hemorrhage, thrombosis, embolism, multiple sclerosis, cerebral syphilis, arterio-sclerosis, tumors, trauma.

2. Senile psychoses. Dementia and deliria.

3. General paralysis of the insane.

B. Disorders of mental adjustment.

IV. DEMENTIA PRECOX GROUP.

1. Hebephrenic.
2. Katatonic.
3. Paranoid.

IVa. ALLIED STATES.

Cases presenting a marked resemblance but without the dementia.

V. MANIC-DEPRESSIVE GROUP.

1. Manic states.
2. Depressed states.
3. Mixed states.

Va. ALLIED STATES.

Cases presenting much similarity but differing either in etiology, symptoms or course.

VI. ANXIETY PSYCHOSES.

Including involuntional melancholia and other forms of agitated depression not belonging to other groups.

VII. DEPRESSIONS.

Not included in Groups V and VI.

1. Simple depressions without differentiating features.
2. Symptomatic depression (cardiac disease, etc.).
3. Depression hallucinosis of non-toxic origin.

VIII. PARANOLIC STATES.

Cases without obvious deterioration.

C. Disorders depending upon abnormal personal make-up.

IX. EPILEPTIC STATES.

(The organic epilepsies belong in Group III).

X. PSYCHOGENIC NEUROSES.

1. Hysteria.
2. Neurasthenia.
3. Psychasthenia.

XI. PSYCHOPATHIC PERSONALITIES.

XII. DEVELOPMENTAL DEFECT.

1. Idiocy. (Some of these belong to Group III).
2. Imbecility.

XIII. COMBINED PSYCHOSES.

XIV. UNCLASSIFIED.

This long and apparently complicated classification is not a practical one for the general practitioner unless he might wish to become a special student of psychiatry. He can use a much shorter one that will serve him amply.

You see before you a short classification, which, while it does not fully cover the ground, by any means, is, at the same time, sufficient for your every day requirements in general practice. The terminology is based mostly upon the symptoms, but such terminology has been used for years and years in this line of work and I think will have to serve us for some time to come.

SHORT CLASSIFICATION.

1. The manias.
2. The melancholias.
3. Mixed states. (Manic-depressive).

4. Circular insanity. (Of a definite type).
5. Dementias.
 - a. Primary.
 - b. Terminal.
 - c. Dementia præcox.
 - d. Senile.
6. Toxic insanities.
7. General paralysis of the insane. (Paresis).
8. Epileptic insanity.
9. Paranoia.
10. Organic brain disease.
11. Idiocy, imbecility, feeble-mindedness.

At some future time, with your permission, I shall be glad to take up this classification in detail and go into the matter of differentiation.

I shall say nothing this evening about the general etiology of insanity, but will leave that for our consideration when we take up the psychoses in detail. Rather let us pass on to the symptomatology, which is the important part for the general practitioner to know. It is important for a number of reasons: that he may be able to diagnose a case of insanity coming under his care; that he may give the patient the best treatment; that he may be in position to give the patient's family the right sort of advice; and, finally—and this is very important—that he may act intelligently when called upon to serve on an insanity commission.

It is a serious matter to commit a person to an insane hospital. But it is the right thing to do and the only thing to do if he is in need of that sort of care. While it would be a grievous mistake to deprive one of his liberty, take away his rights as a citizen, and send him away from his family and his business when he ought not to go, on the other hand it might be disastrous to turn one loose who ought to be confined. He might be dangerous to himself or others, squander his property, or commit some depredation. When we act on one of these commissions, therefore, we should be able to give good reasons for the actions we take. Reasons, not only satisfactory to ourselves, but such as would be upheld by an alienist. In other words, when we commit one to a hospital we are virtually making a diagnosis of insanity, and we should be able to give just as scientific reasons for our conclusions as we would in making a diagnosis of any other malady. After serving a great many times with a good many different physicians on these commissions, it has been my experience that one is apt to err on the side of caution—a misguided feeling of sympathy for the "accused"—leading one to give him his liberty. Too often everybody is in a rush to get through. We do not take sufficient time to go into details and bring out the delusions or other morbid conditions present. The doctors are in a hurry; the patient's friends wish to have the matter disposed of as quickly as possible and the sheriff wants to catch the next train.

SYMPTOMATOLOGY.—A very common symptom that strikes the casual observer is the *delusion*. All insane people do not have delusions, but in a great many cases they are very prominent. Delusion means, literally, to cheat or mislead. So one who has a delusion has misled or cheated himself. He has a false idea.

Delusions are of several kinds. They may be of a pleasurable character or they may be painful. Those of great wealth, of high position, or of self importance are examples of the former kind; those of persecution, of unseen agency, of suspicion, of self-abasement, or of a hypochondriac nature are examples of the latter kind. They may be fixed and systematized or they may be fleeting and unsystematized. A fixed delusion is the same old delusion day after day, and it is systematized because the patient reasons about it. Fleeting delusions come and go and are changeable, and they are unsystematized because the patient does not reason about them.

In order to get a clearer understanding about delusions, suppose we take a little trip through the wards of an insane asylum. Here sits a woman arrayed in her cheap finery; bits of lace, scraps of bright colored paper, pieces of tinsel, beads and other trifles which she has picked up here and there, adorn her person. On her head she wears a very elaborate crown made of card board and covered over with gilt paper. If worn by any other patient, these things, to her, would appear as mere trash, but when adorning her person they are emblems of royalty, and when I approach her while she sits there on her imaginary throne, she receives me most graciously and addresses me as "Lord Samuel." And I, humoring her in her assumption, address her as "Queen Victoria." She acts the part on all occasions, whether in the ward, on the lawn, or at the weekly dance. A quiet, harmless, hopeless, happy *paranoiac* (formerly called a mono-maniac), in many respects the insanest of the insane, and often the most dangerous, with *fixed, systematized delusions of a pleasurable kind* in this particular case. Fixed, because they are there to stay; systematized because by some psychologic process, unknown to any one save herself, (and perhaps she could not explain it), she has added one stone after another to this artificial edifice, this new personality, and behold—a queen! The fact is, she is of very humble origin, has little education, knows nothing of history, is ignorant of Queen Victoria's lineage, and yet, by some "hocus pocus," she has convinced herself that she is the real Queen. As paranoia is not inconsistent with long life (so long as a paranoiac does not attack a president or a crowned head), let us hope that her reign may be as long as was that of her distinguished prototype.

Now let us go over on the male side of the house and see what we can find. We are greeted by an extremely friendly individual who shakes hands with us in the most cordial manner. He is the embodiment of good nature. Ask him how he feels; he never felt better in his life. If he had a good dinner? The best dinner he ever ate. "Beautiful day, isn't it?" "The finest I ever saw." "Are you married?" "Married? Well I should say I am married. Got a wife in Chicago, one in New York, one in London, Paris—wives everywhere." "Have you any chil-

dren?" "Children? You ought to see them. Children by the carload." "How are you fixed, anyway?" In answer he will write you a check for a million or any amount you might wish. Take him over to the window and examine his eyes and you will see that he has the Argyll-Robertson pupil. Look at the pupils more closely and you find that one is perhaps twice as large as the other and both of them irregular in outline. He cannot walk the seam of the carpet or stand still with his eyes closed because of ataxia. Test his knee-jerks and you find them extremely active. There is trembling of the tongue and of the finer muscles of the face and he has a very peculiar manner of speech. He falls over certain sounds, particularly the l's and r's. He speaks with a kind of shu-u-u-d-der—as one shivering with the cold. Difficult for me to reproduce, but when you once hear it you will never forget it. This man is in one stage of *general paralysis of the insane* (paresis, dementia paralytica, chronic diffuse meningo-encephalitis), and he has *fleeting, unsystematized delusions of grandeur*. His reign will be short.

Here sits another who is not quite so happy. In fact he is very unhappy. He sits with his head between his hands, with his eyes closed and with fingers stuffed in his ears to try to mitigate the unpleasant sights and sounds. Get him to look at you and you observe that his face is the picture of despair. He is suffering mental torment. If you gain his attention and confidence—not always an easy thing to do—he will tell you that he has committed some terrible sin and that there are people pursuing him who intend to administer some horrible form of punishment. He has one of the forms of *melancholia*, with *fixed systematized delusions of persecution*. They may hang on for six months or a year, or two or three years before he gets rid of them. He may never be rid of them.

Now we find ourselves in a back ward. A back ward in hospital parlance is one extending back from the main wing and has a more or less disturbed class of patients. There are fewer patients and more attendants in proportion to the front wards, so that there may be better surveillance. In bed is a very noisy patient. He talks incoherently—his flow of ideas is too rapid for his speech to keep up with, or the ideas themselves are disconnected. He talks, laughs, cries, preaches, prays, swears all in the same breath. He is violent. He may strike you if you go near him. There is great motor excitement; his body is in constant action; he gesticulates and makes grimaces. If offered water he will knock the cup from your hand. He refuses food and has to be fed with a tube. This sort of a case is called an *acute maniac* but the newer classification puts him in the manic-depressive class because a great many of them (some authorities claim all of them) have *fleeting, unsystematized delusions*, which are at times of an *exalted* character and at other times *depressed*. Be that as it may, in making out the papers in a case of this kind, when acting on a commission, you will be perfectly safe in diagnosing it as acute mania. He may recover very rapidly.

Let us go over to another building, where we shall find a still different class of patients. Here is one who would rather lie on the floor than sit in a chair. His favorite position is lying with his head resting on one arm, his coat drawn up over his head and ears. This may be the remains of a habit he acquired when passing through his acute insanity. When he looks at you you see how expressionless is his face. The emotional lines are practically wiped out. He answers in monosyllables, or answers not at all. He performs everything automatically. He responds to the dinner bell largely through force of habit, and when the attendant calls him to go for a walk he exchanges his slippers for shoes because he has been taught to do so. If not properly trained his habits will become very dirty. He goes through everything in a routine way. If you ask him what he had for dinner, he cannot tell you; maybe cannot tell you whether he had any dinner at all or not. He has no delusions, or if so, they are mere vestiges of the insane ideas that possessed him years before. His mind is a blank. He has *dementia*; lack of mind. You often read in a newspaper that so-and-so became suddenly demented. That is not the case. He became suddenly insane, but might never reach the stage of dementia.

There are two other symptoms of insanity that are very interesting. They are called *hallucinations* and *illusions*. All insane people do not have them, but in others they are very marked, illusions being the more common of the two. Hallucinations and illusions have to deal with the five senses, the former being false sensory concepts—something originating wholly within a sensory sphere, while the latter are false sensory impressions, based on something external but registered wrongly within. For example: I look away through space where there isn't anything but ether and I think I see an air ship. That is a hallucination of sight, a visual or optical hallucination. But suppose I look away through space and there is really something there to see, a cloud, but I mistake it for an air ship; that is an illusion, a visual or optical illusion. Again: Suppose I look here at the bare floor and imagine I see a dog. That is a hallucination. But if I look at that chair and mistake it for a dog, then I have an illusion. Or: Suppose there is no sound at all and yet I think I hear a voice speaking to me. That is a hallucination of hearing—an auditory hallucination. But suppose there is a sound—a bell ringing, or steam escaping from the radiator and I mistake the sound for a voice, then I have an illusion.

Thus there may be hallucinations or illusions of any of the five senses, and as you have noted, the difference between them is that the hallucination has no external object to base the sensation upon while the illusion has. Hence a blind man may have hallucinations of sight or a deaf man those of hearing, but neither could have illusions of these respective senses. To have hallucinations, however, a blind man must have had vision at one time and a deaf man hearing, in order that sensory impressions may have been stored away, for the same reason that a deaf mute cannot talk who never heard articulate speech.

You frequently see the words delusion, hallucination and illusion used synonymously. They are altogether different. Delusions have to deal with the mind; hallucinations and illusions with the five senses. How often you notice trained magazine writers and others using the word hallucination or the word illusion when they mean delusion or vice versa.

Now while delusions, hallucinations, and illusions are very different, they are often closely related. For instance: Suppose I have either hallucinations or illusions of hearing, but I say to myself: "Nonsense. There is something wrong with my hearing apparatus." and thus reason myself out of it. Well and good. But, say that my mind is in such condition that I cannot correct the false impression; in other words, I *believe* it, then I have a delusion about it. So you see how easy it is for a delusion to be based on a hallucination or illusion and how it is possible for them to reinforce one another.

There is another large group of symptoms called *imperative conceptions* or *ideas*. This term includes the many morbid impulses and obsessions not properly coming under the head of delusions, hallucinations or illusions, and they range all the way from the milder grades of fears and anxieties in neurasthenia on up to the most intense mental suffering, where it is frequently difficult to distinguish between an obsession and a delusion.

These symptoms may exist along with any of the classical forms of insanity, but they often exist alone and are the sole sign of anything being wrong mentally. Under this head come *kleptomania* and *pyromania* and the morbid desires, appetites, and habits of the moral and sexual pervert; the uncontrollable sexual desire in the male, called *satyriasis*, and in the female *nymphomania*; and the perverted appetite for filth, as seen in some forms of insanity.

There are many kinds of phobias. One will tell you that he is afraid to venture out into large open spaces—*agoraphobia*, so-called from the word meaning the public square or town market. Another is afraid of closed places—*claustrophobia*, and will tell you that he cannot remain long in a theater, hall, church, or other place of assembly because of a feeling of suffocation. He is impelled to get out into the fresh air. Another is afraid to be left alone—*monophobia*; others fear to venture in where there are large crowds of people.

Morbid impulses lead to the most extraordinary, absurd, or dangerous acts: The impulse to jump from a high place—that is, the fact of being on a high place leads to the uncontrollable desire to jump off; picking up a butcher knife and wielding it in a murderous fashion upon whomsoever happens to be in the way—the mere presence of the knife suggesting the act; self-destruction with a razor or revolver, or by easting ones self in front of a train, because the weapon or train happened to be on hand at the psychological moment and not because of a pre-conceived notion of suicide.

Obsessions are often described by the patient as "foolish thoughts." He cannot banish them from his mind. Sometimes they take the form

of repetitions of meaningless words and phrases, such as: "Punch, brothers, punch with care, punch in the presence of the *passenjare*"—which kept Mark Twain and others awake at night. In others these repetitions take the form of the most extreme blasphemy or obscenity and of course, to one unaccustomed to thinking in such terms they are a source of much mental suffering.

There is a condition which the French call "*folie de doute*." The victim spends hours and hours debating with himself over the pros and cons of a very trivial matter that he ought to be able to decide offhand; but he takes a whole day for it, and at the end of that time is as much confused as we doctors sometimes are over a diagnosis.

Recently I had under my care a neurasthenic who had very troublesome obsessions. For example: He said he would lock up his store at night but after he got home he would begin to wonder whether or not he had really locked the door. While he was reasonably sure that he had done so, yet he could not remember the circumstances in connection with actually locking the door, so he would have to go back and see about it. Then maybe after he got home he would have to go a second time, to make sure, before he could become sufficiently composed to lie down and go to sleep. All this time his better judgment kept telling him that he had locked the door and that he was giving himself needless worry, yet he could not dismiss the troublesome idea from his mind. Then, too, the Pelly tragedy worried him very much. He brooded over it a long time. Everything he read in a newspaper that in any wise suggested that terrible affair, would bring it back in all its horror and vividness until he almost had delusions about it; his thoughts taking the absurd turn that possibly the reason he could not dismiss it from his mind was because he might in some remote way be responsible for it. During the past winter I saw two cases of insanity with delusions concerning the Pelly tragedy. You see insanity is usually up to date: Wireless telegraphy, aeroplanes, comets, etc.

As a rule, one with obsessions or morbid impulses realizes fully his sad plight and appeals to you to do something for him. He cannot concentrate his mind upon sensible things or control his thoughts, and he fears he might commit some overt act. He fears that he will lose all self-control and become insane. A great many people in this condition have voluntarily committed themselves to hospitals for treatment.

Now, as a matter of fact, one who has delusions, or hallucinations, or imperative ideas, will, sooner or later, manifest it in some way. But he may give just a slight manifestation of it, offering us only a very faint clue to work upon. If, when you are called upon to examine a person with a severe bellyache, you could always find intense pain over McBurney's point, rigidity of the right rectus muscle, a well-defined tumor in the right lower quadrant of the abdomen, the right leg drawn up to relax muscular tension, nausea and vomiting, obstinate constipation, a rise of temperature, and if the patient would very obligingly tell you that he had suffered previous attacks and that several physicians had told him that he had appendicitis, but he didn't believe it, the diagnosis would be very easy.

In the same way, if all those who have delusions, hallucinations, illusions, morbid impulses and the like would be very frank about it, open right up and tell us everything they have in mind, psychiatry would not present so many difficult problems as it does; frequently some of the toughest kind of problems, not only from a medical standpoint, but also medico-legally.

I have known insane people to hide their thoughts for an indefinite period. In some cases it is because they think it is none of your business; in others because of natural reticence; again, because of some fear—that they might make bad matters worse, or might be ridiculed or criticised. Sometimes they do it from sheer cunning; again because they believe they have been commanded by some supreme power to remain silent; and there are many others who are in no condition to tell anything, they are too confused and incoherent. How, then, will you go about analyzing such cases? It is important that it be done. The safety of the patient, or that of his family, or that of the community may demand it, and it may mean everything in the way of prognosis and treatment.

Here is where you start out to become a mind-reader. You play Sherlock Holmes and reason by deduction.

When at the bedside, fulfilling about the noblest mission that comes within the province of a physician, and you have assisted a little eight-pound speck of humanity to make his entrance upon this stage of life, but he fails to make himself heard; you very rightly conjecture that something may be wrong, for you expect him to make a fuss about it. There are some, I believe, who claim that his cry is a reflex act, but I am of the opinion that it is largely an expression of emotion, a protest against being thus unwittingly thrust into a cold world. He is registering his first kick. Then the next day when a pin pricks him or he is otherwise uncomfortable, or in a few days when his little "tummy" begins to hurt and he finds that by using his vocal organs he can secure first aid to the injured, I am still further convinced that he has emotions. Then, too, soon he learns how to fool his fond and doting parents; how to get them up at night and make them walk the floor, all because they did not train him properly the first day or two of his life.

Before long, however, a more agreeable emotion is manifest, he begins to smile and crow, and from now on, through the seven ages of man, from the cradle to the grave, he runs the gamut of all of the emotions; every shade of feeling—joy, friendship, affection, grief, sympathy, hatred, envy, jealousy, anger, rage; a lifelong kaleidoscope of sunshine and shadow, affecting not only himself but likewise everyone with whom he comes into contact. He is never free from emotions of one kind or another. He is not always conscious of them but they are there just the same, whether at work or at play; dreaming or awake. Then he learns something from education. Either through home training or by contact with the world he learns repression, inhibition; how to control his emotions. Still there are times when it is sane and proper for him to give expression to his emotions. There are certain situations in life when it would be unnatural, not to say impossible, for him to feel or

express no emotion of any kind; never to laugh, never to weep, never to resent, never to forgive. When he reads an interesting tale it sends a thrill through him. If fond of a good horse, the excitement of the race stirs up his sporting blood and quickens his pulse. When a member of his favorite team knocks out a home run he doesn't know whether it is his bat or the other fellow's he is beating up. Should he have music in his soul there are certain climaxes that will send quivers up and down his spine and there are certain plaintive passages that will lodge a sob in his throat and make tears well up in his eyes. He goes to see the same old melodrama and sees the same heroine out in the same snowstorm pursued by the same villain and gets the same thrill he always got. He starts out on his day's work; something disagreeable happens the first thing in the morning, upsetting his emotions for the rest of the day, and unless he practices repression he is very apt to insult somebody before night. Practically everything is a play upon the emotions. There is this everlasting stream of feelings of all kinds, of every shade and color passing athwart the human mind; a necessary part of the mentality, and I have mentioned this at some length so that we may be impressed with the fact that when the mind becomes unbalanced, *disturbance of the emotions* must necessarily follow.

There are disturbances of the emotions, of course, that are not necessarily signs of insanity. Some of us, unfortunately, are so constituted that we are naturally peevish and irritable and not very good at repression. There is the spoiled child who knows how to get what he wants by having a tantrum. There is the woman who knows how to work "hubby" with a few tears. Others (both men and women) of a querulous nature whose emotions will not become tranquillized until they stir up a mess of some kind; have a row with somebody; "tell him what they think about him." Then there is the man who commits needless murder because he happens to be a pistol-toter. But in insanity the disturbance of emotions is characterized by exaggeration, prolongation, and lack of inhibition. As examples, the unnatural and unwarranted states: Of exaltation, *mania*; of depression, *melancholia*; of egotism and suspicion, *paranoia*; of grandiosity and expansiveness, *paretic dementia*.

There may be an absence of emotions, *apathy*. Apathy is real or apparent. Real apathy occurs in dementia, all grades of it, because there are few or no mental processes going on to create emotions. There are other cases that appear to be apathetic but they are not. The victim is possessed by some terrible delusion and if you will watch his facial expressions and actions for a sufficient length of time, you will observe that within there is a turmoil of emotion, but outwardly there is little or no expression of it.

The insane person's face and acts express pleasure, anger, surprise, contempt, derision, suspicion, just as they did when he was sane. Why shouldn't they? But his reason for feeling as he does may be altogether wrong, an insane idea back of it. On the other hand he may have just cause for his feelings, a perfectly normal emotion. He takes pleasure at the weekly dance or other amusement; the strange delusions of his

neighbor strike him as being funny; he is angry because of an insult; he is afraid or suspicious because he may be receiving harsh treatment. So that every thought or act of an insane person is not a manifestation of a delusion by any means.

Therefore, through a proper interpretation of the emotions, as expressed by the patient's face, acts, habits, dress, attitudes, and speech (provided he will talk at all, and even voluntary mutism is suggestive in itself), we get some idea as to what is passing through his mind. We try to figure out what is back of it all. In other words, the *motive*, for be it understood insane people have motives. A very common notion is that they do not have; that they are utterly wild, wholly without reason, acting as one in a high state of delirium. That is characteristic of only a small percentage of the insane. The fact is, an insane person has a reason for practically everything he does. It may be a very insane reason, but it is sufficient for him, and he acts upon it. Here is an example from real life. I am making a call on a back ward. The seats are arranged along on either side of the hall; large wooden chairs screwed down to the floor to prevent them from being used as weapons. Each patient has his own chair in order to avoid confusion. A patient gets up and goes down the hall. Presumably he is going for a drink of water or to the toilet. No one interferes with him. All at once he stops and smashes another patient in the face with his fist. Then he comes back and sits down in his chair and says not a word. But he clenches his fists, grits his teeth, his face is blanched and his breath comes in gasps. He is mad through and through.

Said I, "Pat, why did you do that?"

"Didn't you hear what he called me, Doctor?"

"No, Pat, I didn't hear him say anything."

"Didn't say anything! No, I guess not. He's been sitting there for the last half hour calling me everything he could lay his tongue to and I stood it just as long as I could. I'll kill the blank blankety blank, that's what I'll do for him." And he would, too. His hallucinations of hearing make of him a very dangerous patient. You see he had a motive. In fact two of them. The first was to resent a supposed insult; the second was to go about it in such a way as to excite no suspicion. Some one might ask what sort of punishment was administered in order to prevent Pat from repeating such a performance. None whatever. No punishment of any kind, nor anything that might be construed by the patient as such can ever be permitted. It is not only cruel but it adds still further to the troubles of the insane mind. It tends to fix and magnify his delusions and suspicions.

Insane persons are amenable to reason and to kind treatment. They mean to do right, as a rule, as nearly as they know how. They are not criminals; they are unfortunates. So I sat down on the arm of Pat's chair and reasoned with him. I reminded him of the times when on my morning rounds he told me about people who came to his window at night and called him all kinds of names and how he would get up and swear at them and try to drive them away. How I had explained to

him that he had something wrong with his hearing, causing him to imagine that he heard voices; that we would not allow any one to come about annoying him or any one else. "And now," said I, "Pat, this is another case just like that. Your hearing has been playing tricks upon you again, and if you could, in some way, reason yourself out of it you would get well and go home. That is all that is keeping you here."

"Well," he replied, and he was considerably mollified, "you may be right, Doctor, but how am I to know?"

He asked me too hard a question.

If an insane person will talk, of course we can learn very much more about his condition of mind, even though he may talk but a little and that incoherently. For instance, he may talk to himself. That is always suggestive. Sane people sometimes talk to themselves but they are only thinking aloud. When an insane person talks to himself, whether in a loud voice or in a whisper or merely moves his lips, it usually means that he is conversing with some imaginary person, answering some voice, or that he is talking to some person or object he thinks he sees before him. So he evidently has hallucinations or illusions of sight or hearing, or all. Hallucinated individuals stand at the window and rail at their imaginary foes on the outside, just as Pat did. They are especially apt to do this at night when there are fewer extraneous sights and sounds to distract them from their hallucinations.

Incoherence may come about in several ways. It may be due to an accelerated flow of ideas, or, on the other hand, to a paucity of thought, a diminished flow. It may be due to aphasia, or accompany the delirium of toxemia. In other cases it is due to disorientation. Orientation is the faculty the normal person possesses of locating himself properly as to time, place and personality. One who is disoriented may not know where he is, what day or year it is, may not recognize his family or friends, or even know who he is himself.

The *memory, will power, judgment and degree of inhibition* should be studied, but I shall not dwell upon these any further than to say that the memory in some cases is very acute. This is especially noteworthy in periodical mania and in the maniacal phase of circular insanity, the patient calling to mind and taunting you with all of the mean and tantalizing things he ever heard about you. Some persons will pass through a most violent attack of acute insanity and yet when they emerge from it can tell you practically everything that transpired. In other cases the memory is very defective. Memory is the storing away of sensory impressions and recalling them through an effort of the will or by the association of ideas. If the senses convey no impression of an event, there can be no memory of it; or if the receiving part is damaged, the event can make no impression. In senility the memory may be very fair for events long past but very poor for recent occurrences.

The patient's writing often gives us valuable information. He will sometimes write freely about his delusions when he will not talk about them. The handwriting itself is in some instances very characteristic, as in general paralysis of the insane.

Now the foregoing symptoms, which I have been trying to describe, are, as a matter of course, not all present in a given case. Some patients will have a few, others many. Some will have obsessions, others delusions; others will have added hallucinations or illusions or both. Some will be violent, or destructive, or suicidal, or homicidal. You see there may be all kinds of combinations of symptoms. We must try to interpret what we see: a hint, an act, a suspicious move, and we must not forget to weigh carefully the evidence of the patient's family and intimate associates, taking their testimony for exactly what we think it to be worth, because, sometimes, in their eagerness to have the matter disposed of, the friends will overstate things, not realizing that a plain statement of facts might be sufficient to establish the insanity.

Each case is a little different; you are studying a separate individuality; a distinct *ego*, a self that wills and thinks and feels and acts. An "I," the personal pronoun "I." As John Kendrick Bangs calls the ego, "I, I, Meself." So, when you have analyzed this "I. I. Meself" and have diagnosed an insanity, you may still be unable to classify him. He may be in a class all by himself. But ninety-nine chances out of a hundred he will come within the short classification I have presented to you.

Finally, insane people may have any kind of disturbance of the bodily functions: Of sensation or motion; of the alimentary tract, the emunctories or metabolism; disorders of temperature or circulation. There may be abnormal urinary constituents or cessation of menses. And there may be present real pathologic conditions (aside from any we would naturally search for in the brain or nervous system):—Diseases of the organs in the chest, abdomen or pelvis; of the blood or blood vessels; tumor, cancer, alcoholism, drug habit; tuberculosis, syphilis or other infection—the insanity being a mere incident.

In conclusion I wish to say that I hope the day will soon come when the state institutions will have clinics where graduates in medicine may go and familiarize themselves with this important branch of our profession, and then some day, insanity will be placed where it properly belongs, in the category of preventive medicine.

THE NURSING SPIRIT.*

WILLIAM C. GRAVES,

Executive Secretary of the Illinois Charities Commission.

In nursing the sick, as in any other art, a spiritual fitness for the service is necessary to success. The physician who inspires confidence in his patient by his healing spirit wins the battle against illness more quickly and more completely because of the stimulated hopeful attitude of his patient. Psychology, thus applied, is the militant aid of medicine and the knife, even in those desperate straits where heroic medical treat-

* Read at the Commencement Exercises of the Training School for Nurses of the Lincoln State School and Colony, May 27, 1910.

ment, or surgical interference, tides over a crisis for a patient who is conscious of what the doctor is trying to do to help him.

The same holds true of the nurse. Perhaps spiritual fitness in a nurse is more essential to the relief and cure of a sick person than is the same quality in a physician. The nurse is in charge practically all the time. The doctor, as a rule, sees the patient at intervals. Hence it is a fundamental necessity that a nurse who wishes to succeed in the largest sense of the word must have the genuine nursing spirit. She must love to care for the sick. She must find her greatest delight in gentle ministration to them. She must receive her greatest compensation in the realization that persons curably ill are restored to health and the pleasures and comforts of life as the result in part of her tender and intelligent care; and that those who die pass into the great beyond soothed by the knowledge that a sympathetic soul is watching over them.

These statements may sound like the thunderings of a sermon, or like a scolding, in a period when too many nurses are coldly scientific in their service. If this is a sermon, very well! Let it be one. I have seen ultra-scientific nurses. It would appear almost that they suppress the sympathy, the tenderness, and the mothering instinct that are supposed to well up in the hearts of all women in the presence of illness and suffering, because it is wearing upon them to expend nervous energy in sympathy and the like, although they perform their specified duties with religious fidelity. Many of these women are most capable scientific nurses, but, if you were ill, which would you prefer, to have one of them care for you or one of those heaven-sent creatures whose gentle touch and whose encouraging words are added to scientific ministration as an anodyne for your troubled heart and a stimulant for your apprehensive spirit? If you were ill, it would not take you long to make the choice, would it?

Incident Illustrating the Nursing Spirit.—I recall an incident in the Cook County Hospital, Chicago, of a recent summer, which illustrates what I am trying to state. It was during a period of intense heat. In the congested areas of the great city the poor were driven out of their homes at night. The houses, three deep from the sidewalk to the alley, were like bake ovens. Women lay in the street gutters, their heads pillowed on stones, or on the edge of the sidewalk. Their babies lay beside them. Older children slept on garbage boxes and sidewalks. Men slept where they could find a breath of air, sometimes in open drains. Every morning the newspapers had columns of names of those who had died from or had been prostrated by the heat the day before. All the hospitals were congested with heat cases.

During one of these stifling nights an inspector visited the Cook County Hospital. In a certain bath room was a heat case wallowing in a tub of ice water. He was a Pole. He was muscular, his hair in a tousled mass was matted down over his eyes, his hands were knotted from hard work, he was indescribably filthy, and he kept up a combina-

tion moan and articulation of words nobody seemed to understand. His temperature was bumping the top of the tube. His death was a matter of a few hours.

Beside the tub containing this brawny laborer stood what the novelists call "a slip of a girl." She was eighteen years old. Her brown wavy hair, her large, blue eyes, set far apart and tender but full of the spirit of conflict, and the softness of her skin and the pink that came and went in her cheeks when she performed some unpleasant task, presented a striking contrast with her uncouth patient. She was working over him is if he were her sick baby. She was genuinely mothering a hulking, strange, sick man. When this young nurse paused for a moment in her exertions, the inspector, who had been looking on, said:

"You seem to be taking pretty good care of that poor fellow."

"He needs it," she replied.

"Who is he?" the inspector asked.

"I don't know," she replied, "but I do know that he has had a hard time and that he is very sick. The police brought him in."

"Do you think you are able to cure him?" the inspector ventured.

"Yes, I do!" she cried. "He *must* get well!"

He died in the early hours of the next morning. The nurse's battle was a losing one. When the inspector was at the hospital again, he asked her how it was she was so sure that patient would recover. She smiled and said:

"I never give a patient up unless he is dead. I am a *nurse*."

So she was. That young girl exemplified what I mean by the nursing spirit.

The Ideal Nurse.—Now there are nurses and nurses. Some are natural nurses, who possess only the nursing spirit. Some are scientific nurses, machine nurses, you might say, who secretly believe and some times openly affirm that they are just as competent as, or even more competent than, doctors. Some are nurses "for the fun of it." Some are nurses because they are pretty. Some are nurses because they are rich and don't know what else to do with their time. Some are nurses who work in sole anticipation of the "day off." Some are nurses only for pay. Some are nurses, who, like the bibulous and cucumber-loving Mrs. "Sarey" Gamp, think of their comfort and not the patient's welfare, and, also, "stand in" with an undertaker who is "right." Some are nurses whose business I do not care to discuss before you. None of these nurses is fit for service in the Illinois State charitable institutions, nor in municipal or private hospitals, nor in families in these days of progressive and high grade care of the ill. The ideal nurse, I think, is one who has the nursing spirit, who is neat, good and wholesome and who has acquired and can apply scientific knowledge of the art of nursing under the direction of a competent physician or surgeon. It is this sort of nurse that the state of Illinois is trying to develop in its charitable institutions, by selection through the civil service, by courses in institution training schools and by the practical experience of service.

Four Years Ago at Lincoln.—Perhaps some of you are not aware of what Illinois has done to modernize its nursing service since the awakening four years ago. To illustrate this let me turn back the pages of history and read to you from a report to Governor Deneen of an inspection of this institution—then known by the repellant title of the Illinois Asylum for Feeble Minded Children—made by the State Board of Charities, in April, 1906. In referring to this dark, closed chapter, I have in mind the criticism of no individuals, but of the primitive system then in vogue. Some paragraphs from this report read as follows:

The medical administration is defective. Practically no diagnosis is made. Hospital records, as kept, are practically valueless. There are no trained nurses in the modern sense. There is no training school for nurses. No pathological work is done. There is no dentist. * * * The infirmary building is well adapted to its purpose, but it is unscientifically managed. Mrs., in charge of the hospital, is not a graduate of a training school for nurses. Nor is any other nurse there. There isn't a history sheet in the place.

The records kept by Mrs. are in small school composition books with paper covers, one for girls and one for boys. The names are not arranged alphabetically. The entries give name, date of admission to infirmary, date of discharge and disposition of the body in case of death as "buried here" with the initial of the undertaker's last name, or "sent home."

In a few cases there is an attempt at diagnosis as follows: "Sore eye," "sprain," "looking bad," "croup," "has fever," "eczema," "bad burn," "sore mouth."

One entry identifies a patient who had died as "a little darkey." There is no diagnosis in this case; no history of the sickness. But the name is given.

Mrs. said she burned her record books as soon as they were filled, as she understood complete medical records were kept in the main office.

At the administration office Dr. said there was no medical history books, but merely the fact of death was recorded along with the disposition of the body, but later he produced a book which he said he had forgotten. It is a small paper-covered book called "physicians' hospital report." It gives the date of admission to the hospital, name of patient, primitive diagnosis, and date when parents or friends were notified of the illness. Here it ends. For discharge or death one must refer to Mrs.'s hospital composition books, etc. A sample entry in this "physicians' hospital report" is as follows:

"December 24, 1905, Lucretia Nichols, rheumatism." Some of the other diagnoses in this book are as follows:

"Lung troubles," "stomach troubles," "very poor health," "heart trouble," "eczema, very homesick," "general run down," "growing weaker," "worse," "failing in health," "does not improve," "poor health and worse."

There are in the administration office three old volumes of medical records dating back to Jan. 1, 1884. They give brief medical histories of the various cases, school programs, date of admission, age upon admission, date of discharge; also application number. The records in these volumes run up to Oct. 22, 1899, and stop there.

The medical records at present are those kept at the infirmary by Mrs., the nurse in charge; certain items in application papers; the spasm books, which record the number of epileptic seizures patients have, and death and burial entries in office records.

While the infirmary has a modern operating room, there is no operating table there, no cabinets of instruments and no sterilizer. The place is used, apparently, as sort of a reception room. Vases of flowers are to be seen. Dr. said there were operations occasionally. In the drug store in the main building is a case of cranial instruments and pocket cases. * * *

There is no laboratory for pathological research. Chemical examinations of urine are made. No microscopic work is done. Mrs., head of the

hospital, said there had been two post-mortem examinations in the seventeen years she had been at the institution. Those were requested by relatives. Apparently a vast amount of precious live and dead scientific material for the study of defective children is going to waste at Lincoln. * * *

The attendants and nurses are recruited from extra employees, i. e., men who cut grass, shovel coal and drive horses, and women who begin service as domestics. As they "show their fitness" * * * they are advanced to be attendants and nurses. The only hint of a training school is general instruction given by the doctors to those nurses who serve in the infirmary.

There is no registered pharmacist as druggist. Prescriptions are compounded by the doctors. Some of the simples are mixed by women.

The teeth of the patients, as would be expected in feeble-minded persons, are defective, and appeared to be neglected. Dr. said he had no dentist. The doctors pull teeth.

There is a medical library at the institution.

Sixty per cent. of the patients * * * are said by Dr. to be tuberculous. No attempt has been made to determine the number of cavity cases and segregate them. A few moribund patients are kept in small rooms off the general hospital wards in the infirmary. Metal grilles in the doors of these separate rooms make possible a general circulation of air from the consumptives to the general patients in the wards outside. One woman, a patient in a separate room, spat so wildly that sheets were spread on the floor and walls to catch the sputum. These sheets, Dr. said, were treated with formaldehyde and then cleansed in the general laundry along with other institution bed sheets.

All this was inexcusable and indefensible, in view of the fact that modern medical administration and trained nurses were available in this institution four years ago, but, barbaric as the situation at Lincoln was, as shown in the report from which I have just quoted, many of the aspects of the service then were quite excellent compared with nursing standards of less than one hundred years ago. Trained nursing is a comparatively recent art.

Some Old Rules for Nurses.—As late as 1830 nurses were often of the lowest character. No attempt was made to educate them. Some of the old rules show an endeavor to curb their improper habits. For instance in an old English hospital, in 1557, the nurses were admonished to "eschewe all . . . skoldings, swearings and drunkenness." Scolding and drunkenness must have been sources of complaint against nurses in those days for again we find an old rule of the date of 1580 which instructs them to "avoid, abhor, and detest scoldings and drunkenness as most pestilential and filthy vices."

Some curious duties of nurses are set forth in rules of an early date of the old English Hospital of St. Thomas, London. The nurse, according to these rules, "must keep and scour the cans for beer; the broth pails, pans, plates, etc., soiled at dinner. She must attend the butler at the ringing of the beer bell and take with her such patients as are able to carry the beer in safety to the wards and not suffer such patients to waste or embezzle it by the way, but see that the cans be carried full into the ward." In like manner it was the duty of the nurse to attend to the bread bell and the cook's bell.

Dicken's Description of "Sarey" Gamp.—Perhaps the most accurate description of a nurse, or I would better say of the incompetent and brutal nurse, antedating the period when the work and example of

Elizabeth Frye, Florence Nightingale and Dorothy Dix flooded the hospitals with sweetness and light, was "Sarey" Gamp, the creature referred to previously herein as bibulous and fond of cucumbers. Charles Dickens, in his *Martin Chuzzlewit*, describes her as follows:

She was a fat old woman, this Mrs. Gamp, with a husky voice and a moist eye, which she had a remarkable power of turning up and only showing the white of. Having very little neck, it caused her some trouble to look over herself, if one may say so, to those to whom she talked. She wore a very rusty black gown, rather the worse for snuff, and a shawl and bonnet to correspond. In these dilapidated articles of dress she had on principle arrayed herself time out of mind on such occasions as the present; for this at once expressed a decent amount of veneration for the deceased and invited the next of kin to present her with a fresher suit of weeds, an appeal so frequently successful that the very fetch and ghost of Mrs. Gamp, bonnet and all, might be seen hanging up any hour of the day in at least a dozen of the second-hand clothes shops about Holborn.

The face of Mrs. Gamp, the nose in particular, was somewhat red and swollen, and it was difficult to enjoy her society without becoming conscious of a smell of spirits.

Like most persons who have obtained eminence in their profession, she took to hers very kindly; insomuch that, setting aside her natural predilections as a woman, she went to a lying-in or a laying-out with equal zest and relish.

I wish there were time for me to read Mr. Dickens' description of Mrs. Gamp in active duty in a sick room. Those of you who care to see this grotesque word picture of a bygone reality will find it, and also Mrs. Gamp's illuminating business conference with baldheaded Undertaken Mould, the oleaginous and complacent, who did "the thing pleasantly and in a great variety of styles," in chapter 25 of the first volume of "*Life and Adventures of Martin Chuzzlewit*."

Modern Nursing Service in Illinois.—You probably are aware of the devoted service of Elizabeth Frye, Florence Nightingale, Dorothy Dix, Clara Barton, "Mother" Bickerdike and others. It was their true spirit of nursing, their devotion, which humanized the art and formed the basis on which the modern system of trained nursing has been reared. You are well aware, of course, of the great changes for the better that have taken place in this institution under the enlightened superintendency of my friend, Dr. Hardt, but the same sort of medical and nursing service which has been installed here, has been put in force in all the state charitable institutions, notably in the insane group, since Governor Deneen assumed the executive office in Illinois. For your information I desire to present a brief statement of the improvement in the nursing and attendant service in our institutions in recent years, including the calendar year 1909:

Women as Nurses—Increased Service: The nursing and attendance service has been placed under the charge of women and the number of women nurses and attendants has been increased in a greater ratio than male employees by placing women on male wards to as great an extent as was practical. During the four years 1905-1909 the population of the eight institutions in the insane group (including Lincoln) increased 20.49 per cent., the attendance force increased 30.90 per cent., the female attendance force increased 48.23 per cent. and the male attendance force increased 12.18 per cent. In 1905 there was one female superin-

tendent of nurses; in 1909 there were seven, or an increase of 600 per cent. In 1905 there were no graduate nurses; in 1909 there were 43. If the 43 graduate nurses and the six additional chief nurses (superintendents of nurses) are included with the attendance force the percentage of increase of this combined force is 36.87 per cent., or 16.38 per cent. greater increase than the percentage of increase of the average population.

Wages Increased; Hours Lessened:—The wages of attendants have been increased. The average maximum monthly salary paid male attendants in 1905 was \$35.75; in 1909 was \$42.33, an increase in favor of 1909 of \$6.68, or 18.68 per cent. increase. The maximum salary for women attendants in 1905 was \$27.30; in 1909 was \$33.50, an increase of \$6.20 a month, or 22.70 per cent. increase. In addition to their salaries attendants are furnished board, room and laundry service free of charge. Bartonville has adopted the eight-hour system. Other institutions have begun a reduction of hours of duty according to the local possibilities. In 1905 there was one woman head nurse, who received \$75 a month. In 1909 for the seven women head nurses the minimum salary was \$60 and the maximum \$75. There were no graduate nurses in the service in 1905. The 43 in the service in 1909 received a minimum of \$40 and a maximum of \$60 a month.

Lincoln Now Among Best.—It is a great pleasure for me to attend and take part in these graduating exercises and to see the evidences on every hand of an endeavor to give the unfortunates here quartered the best that the knowledge of to-day affords for them. I appreciate the changes, because I saw this place at its worst. Lincoln has been the football of politicians. It was the center of a recent investigation, colossal in its unfairness to the people responsible for the administration of this school and colony. But time has quickly obliterated the evil effects of that inquiry; and, if there are any enemies still defaming this school, the resolution adopted by the American Association for the Study of the Feeble Minded on the 18th of this month, when it honored Lincoln by meeting here, should silence the last of them, when the following paragraph is called to their attention:

Also, the Association wishes to hereby express its gratification over the marked improvement in the conditions characterizing the school for the feeble-minded during the administration of Dr. Hardt by which it has again risen to the ranks of the very best in this country. The transformation has been truly marvelous. All connected with the institution have been more than courteous; the children have demonstrated the excellent training that is being carried on, and the members of this Association are returning to their homes with new inspirations for their own work and feel satisfied that the attitude of the State Board of Administration is such that this standard will be maintained. This institution and the officials responsible for it and the state are to be congratulated upon the establishment here of a department of psychologic research, this being the first official recognition of this work in any state institution for the feeble-minded in this country.

The gentlemen who thus endorsed the service at Lincoln are the most competent critics in America of institutions for the feeble-minded. Dr. Hardt has reason to feel a justifiable pride in thus receiving from them a verbal pat on the back after the baptism of fire through which he and Lincoln passed so recently. But I am sure he realizes, as do those of us who reside in Springfield, that the great work accomplished here since the dark days two years ago could not have been accomplished without the encouragement of loyal hearts and the help of willing hands among

the employees. We are glad to acknowledge this help and to thank the loyal employees for it.

For the excellence of the particular branch of the modern service in evidence at these commencement exercises, the nursing service, the state owes its gratitude to Miss Maude Weaver, chief nurse, and to Dr. C. B. Caldwell, in particular, and to the whole medical and nursing force in general.

CONCLUSION.

You who are members of this graduating class are first fruits of the local training school. I desire to congratulate you upon the nursing accomplishments which these commencement exercises proclaim you to possess. I desire to congratulate the institution upon the results of its training school work. I wish you long and successful careers in one of the noblest of callings. But do not forget, no matter how trying your work may be at times, that the spirit of nursing (the mothering sense), as well as scientific knowledge, is necessary to a successful career in your chosen vocation.

SPLENECTOMY IN RELATION TO UNION IN FRACTURES.*

AN EXPERIMENTAL STUDY OF THE ADVISABILITY OF REMOVING A RUPTURED SPLEEN WHEN IT IS ASSOCIATED WITH A FRACTURE OF BONES.

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The custom of removing the spleen when ruptured has suggested the question as to the advisability of this procedure when the injury is associated with a fracture of one or more bones, a complication that is not at all uncommon, owing to the fact that these patients are generally the subjects of an exceptionally severe injury, such as a fall from a great height. My interest in this question was heightened by noting such a complication ending in non-union among the cases reported from the clinic of Prof. Rehn, of Frankfurt.¹ There was neither callus formation nor union at the end of four months. The fracture was cut down upon and carefully united. Two months after this operation there was some slight callus formation, but the fracture still showed some abnormal mobility. The injection of iodine and of blood, after the method of Bier, availed nothing. After a year and a half, however, an enormous callus had formed and firm union was present.

As is well known, the bone marrow assumes the function of the spleen when the latter is lost, and this suggests a possible explanation of failure

* Read at a meeting of the Chicago Medical Society, April 27, 1910.

1. Ueber Milzexstirpation wegen Milzverletzung, W. Noetzel, *Beit. z. Klin. Chir.*, Bd. 48, H. 11, 1906.

of union, since the changed function may delay repair. Our knowledge of bone repair is still hazy, and the exact part played by the various elements of the bone is still a moot question, in spite of the amount of work that has been done upon the subject. Wieder,² in an extensive study of the question, has modified many of the ideas that have come down to us from Dupuytren. A part of his conclusions which have a bearing upon this subject may be quoted:

In regeneration of bone, all the various elements, viz., periosteum, cortex, endosteum, and marrow, assist in the process. The medulla assists in the formation of osteoid trabeculae by means of a skeleton framework along which the



Fig. 1.—From splenectomized dog No. 15.

trabeculae form and also, probably, by the activity of some of the marrow cells. Healthy medulla, when sutured between the apposed surfaces of the periosteum, hastens considerably the regeneration of bone.

With all of these suggestive facts before us, it seemed advisable to determine from an experimental standpoint whether, when this condition confronted us, it would be safe to resort to splenectomy, or whether it might be more advisable to attempt to save the spleen by one of the various methods of suture.

The work was begun some two years ago and was carried on in the Laboratory for Experimental Surgery at Northwestern University Medical School, and I wish to acknowledge the faithful assistance of various students there who have helped me, particularly Dr. W. L. McClure and Dr. G. W. Cornett.

Owing to various petty annoyances and difficulties well known to those who have to do with animal experimentation, the work of the first year had to be done over almost entirely the second year, but finally a complete series of splenectomized and control dogs was secured. The technique used was as follows: Dogs of approximately the same age and size were chosen. All dogs were anesthetized. In one series some such operation as gastroenterostomy was done, and two or three days following this one of the hind legs was broken, either by manual force or by counter pressure over the edge of the dog board. The dogs for this series were often those upon which some abdominal operation had been done in the student course.

In the second series the spleen was removed and the leg fractured on the same day. The legs were then covered by a plaster of Paris splint,

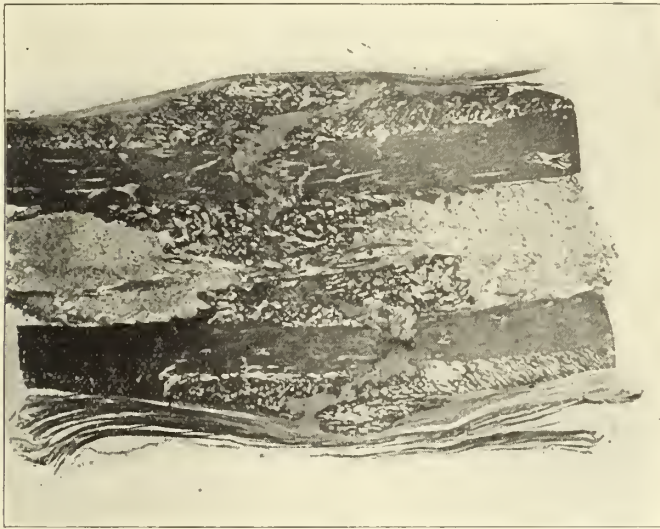


Fig. 2.—Splenectomized dog; 38 days. Note proliferation of both periosteum and endosteum.

which was removed from time to time. Some difficulty was met in the early cases, since the foot would become swollen below the cast and a pressure necrosis take place at the junction of the cast and the foot. This was finally obviated by covering the entire leg and foot, care being taken to bend the leg at a right angle, so that the cast would not come off.

The control and splenectomized dogs were killed at intervals of a few days, the legs removed and preserved. The fractured bone was sawed longitudinally and one-half decalcified by sulphuric acid. Sections were cut, and stained with eosin and hematoxylin.

At the time the dog was killed the amount of apparent union as shown by the mobility was noted, and classified as complete, firm, mod-

2. Regeneration of Bone, etc., by Henry S. Wieder, M.D., University of Pennsylvania, Med. Bull., September, 1907.

erately firm, slight union, and no union. The following cases were satisfactory in course and condition, and they were used for comparison, although by no means do they represent the full number of dogs operated upon:

SPLENECTOMIZED DOGS.

Dog Number.	Age of Fracture. Days.	Apparent Union.
2	51	Complete
6	42	Complete
3	35	Complete
12	29	Firm
19	26	Slight
9	24	Mod. Firm
17	20	No union
15	14	Slight union
23	10	No union
24	10	No union

CONTROL DOGS.

Dog Number.	Age of Fracture.	Apparent Union.
13	48	Complete
10	28	Complete
14	22	Firm
22	20	Firm
29	14	Mod. firm
21	7	No union

Although many interesting observations concerning bone repair in general might be made in a microscopic study of the specimens, that is not germane to this subject, and I shall confine myself to a general description of a few of the control and splenectomized specimens simply in a comparative sense. Neither shall I discuss the changes in the bone marrow which has already been done by other observers.

Dog 21. Control 7 days. Examination shows that blood extravasation is still present, and the fibrin between the ends is marked. The cartilage formation is well begun at the edges, considerable areas being present, but the exact origin is difficult to determine. The bone proper at the edges shows beginning adsorption. Osteoclasts are present in considerable numbers and much fibrin is seen. Trabeculation under the periosteum is well begun. The ends of the bones are not well approximated and there is some angulation.

Dog 25. Splenectomized 10 days. Fracture is near epiphyseal line. There has been no separation of the fragments. Extravasated blood between the fragments has not been absorbed. There is no evidence of cartilage formation or subperiosteal trabeculation. Slight subperiosteal absorption of bone by osteoclasts is evident.

Dog 15. Splenectomized 14 days. Fair apposition of the fragments. In one place a beginning development of cartilage is noted, hardly as much as in the seven-day control. No osteoporosis of cortex can be seen but connective tissue has begun to develop in the medulla. Subperiosteal trabeculation has begun but is not far advanced. Trabeculation is marked in the medulla.

Dog 14. Control 22 days. Extensive subperiosteal cartilage development. Areas of cartilage have invaded the medulla apparently from endosteum but exact origin cannot be determined. Osteoporosis of medullary trabeculae and periosteal trabeculae previously formed is well advanced. Little cartilage development has

extended between the bone ends in the cortex but osteoporosis has begun. Connective tissue development between medullary ends well marked.

Dog 17. Splenectomized 20 days. Trabeculae have formed under periosteum but very little cartilage formation is present. Very slight osteoporosis is noted. Very small amount of new connective tissue is found in the medulla. No change in ends of cortex bone and nothing between them.

Dog 10. Control 28 days. Extensive cartilage growth between ends of medulla but none between cortex ends. Medullary and periosteal osteoclasts many in number, few in cortex. Connective tissue and cartilage completely bridges medulla and periosteum.



Fig. 3.—Osteoclasts found in sections from Dog 15.

Dog 12. Splenectomized 29 days. Extensive subperiosteal trabeculation. Very few osteoclasts, osteoblasts plentiful. Little cartilage between medulla ends, but considerable connective tissue. Periosteal growth continues, but no continuity in medulla or in cortex.

Dog 3. Splenectomized 38 days. Although this dog died from unknown causes on the thirty-eighth day, it is a most valuable specimen from our standpoint. The dog was young. The medulla showed few trabeculae, yet both the periosteal and endosteal trabeculae were highly developed. The origin of each is clearly seen and the growth from the two sides has grown over and united with their respective opposite ends, clearly demonstrating the rôle of both the endosteum and the periosteum. Osteoporosis of the cortex ends has begun, but there are no trabeculae or cartilage between the ends. A small amount of cartilage is present, but mostly in the periosteal region.

Dog 2. Splenectomized 52 days. Presents the processes of bone repair, both cartilaginous and osteoid, fully comparable with a 40-day control, and indeed there is a theoretical difference only between the 52-day splenectomized dog and a 48-day control.

The comparative study of this series shows that while repair is apparently delayed slightly, for practical purposes we cannot attribute ultimate non-union to the loss of the spleen. In the various specimens the individual elements vary considerably in the rate of repair. In one case we find the medulla throwing out its connective tissue frame-work and some of the other elements sluggish; and again, as in Dog 3, we find very little change in the medulla, yet here the periosteum and endosteum have gone on to a union of the respective trabecular growths. This specimen is a most beautiful demonstration of this method of repair. Again

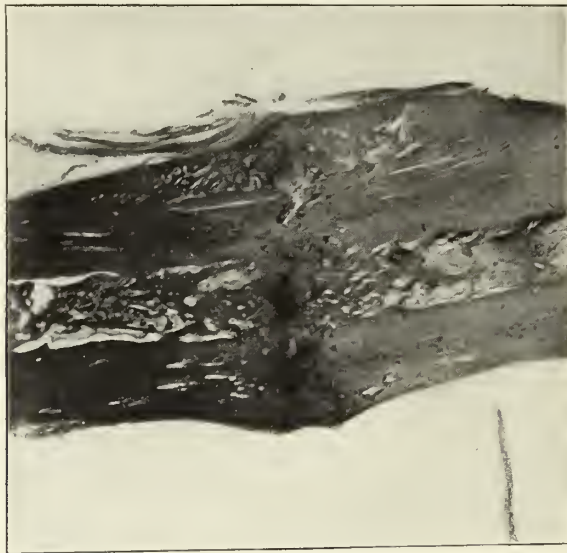


Fig. 4.—Dog 2. Splenectomized, 52 days.

in Dog 12 the medulla has been active, while the endosteum shows only slight change. The formation of cartilage also varies considerably, although in some it is most marked.

CONCLUSIONS.

The removal of the spleen when it is ruptured interferes slightly with the repair of any fracture, but not sufficiently to contraindicate its removal if the exigencies of the case demand it. On the other hand, if it can be sutured with safety to the patient it should be done.

Splenectomy results in impairing the regenerative power of bone in varying degrees in various elements, having in general a more marked effect upon the medulla, but in individual cases this apparently may be but slightly affected, while the other elements may be more seriously affected. In other words, the effect is probably the result of the general change in the system rather than any specific effect upon the bone.

FRACTURES OF THE MANDIBLE.*

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Fractures of the mandible are comparatively common, and differ from fractures of other bones mainly in that they are generally compound. When compound the exposure of the bone is usually within the mouth, thereby subjecting it to infection from the oral fluids, which not infrequently contain pyogenic bacteria. It is well known that the soft tissues of the mouth and the alveolar process when injured, resist the baneful influences of pus-forming organisms in a marked degree. Tooth extraction with considerable injury of the gums and alveolar process rarely results in infection, but when the body of the bone is broken and communication with the mouth is established, suppuration frequently occurs. This fact, together with the numerous muscular attachments of the mandible, render the treatment of lower jaw fractures especially difficult.

Prior to the better management of these fractures it was rare that any case recovered with perfect occlusion of the teeth of the mandible with those of the maxilla. Imperfection in occlusion left the patient with an impaired masticatory apparatus, seriously handicapping his physical well being, in addition to the establishment of a permanent disfigurement.

Fractures of the mandible may occur in any part of the bone, including the ramus and neck of the condyle, but are most frequently sustained in the region between the lateral incisor and first molar. Fractures of the angle rank second in frequency. They often accompany fractures in the body of the bone as a complication; indeed, if there is a multiple fracture of the mandible one of the breaks will generally be found at the angle. More than two simultaneous fractures of the mandible are rare. However, in my service at St. Luke's Hospital I had a patient with five breaks in the lower jaw, complicated by separation of the upper jaw from its bony attachments above and split in two in the median line throughout. In this case the lower jaw was broken on the left side at the angle and on a line with the first bicuspid. On the right side there was a fracture at the neck of the condyle, one at the angle, another at the cuspid tooth. The nasal bones were also broken. The face was literally a bag of broken bones. This complicated injury was due to a fall from an open window on the second floor of a building, to the pavement below.

DIAGNOSIS.

Diagnosis of fractures of the body of the mandible is not usually difficult. Mobility and crepitation by manipulation may easily be made out, and displacement is the rule. Except in edentulous jaws the teeth generally indicate fracture, by being out of alignment, with abnormal occlusion of the lower with the upper teeth. Fracture at the angle or of the ramus is diagnosed by mobility, malocclusion or the skiagraph.

* Read at a meeting of the Chicago Medical Society, April 27, 1910.

However, neither malocclusion or displacement is the rule. Occasionally in a unilateral temporo-mandibular luxation a differential diagnosis is necessary to determine whether there be a fracture of the neck of the condyle or a dislocation, since in either case there will be malocclusion of the teeth. This is not difficult since in dislocation, the condyle will be out of the glenoid fossa, therefore a deep depression with a concave upper surface will be felt in front of the tragus of the ear, while in fracture of the neck, the head of the bone will occupy its normal place and there will be no depression.

Displacement.—Displacement is caused primarily by the force which caused the accident and secondarily by muscular traction.

There are eleven pairs of muscles attached to the mandible and each one of these in the performance of its functions may, if the line of fracture be favorable, produce displacement of fragments. Those most active in causing displacement are the masseter, internal pterygoid, mylohyoid and temporal. If the break is in the vicinity of the cuspids or bicuspid, and the line of fracture be such that the short fragment does not impinge on the longer fragment, the distal fragment will be drawn lingually by the mylohyoid and the internal pterygoid and elevated by the masseter and temporal.

If the jaw is broken in two places, one on each side, in the bicuspid region, the mental fragment is depressed by the muscles attached to the genial tubercles, while the posterior fragments are elevated by the masseter and internal pterygoid muscles, causing such displacement. Such a fracture is difficult to manage by the older methods of treatment.

Fracture of the angle is not usually accompanied by any marked displacement and may be overlooked, especially in corpulent patients, unless a more than casual examination is made. Fracture between the second and third molars may also be overlooked, even though there be malocclusion between the upper and lower teeth caused by impingement of the third molar against an upper tooth by muscular elevation of the posterior fragment. In such fractures it is not uncommon for the patient to be unaware of the nature of the injury, attributing the malocclusion to a supposed injury of the posterior teeth. The surgeon may be similarly impressed. However, a careful examination discovers the presence of a fracture. A number of such cases have presented at my clinic. Whenever there has been an injury about the jaws careful search should always be made for fracture of the mandible, since in some cases in which the periosteum has been but slightly injured the only symptom observed by the patient is inability to masticate without pain or inconvenience. The loss of this function is frequently attributed by the patient to a supposed injury of the teeth, therefore he does not call attention to the jaw. Other injuries more painful or of greater concern cause the surgeon to concentrate his attention in their direction. If fracture is suspected, say in the left ramus, its presence may be determined by the following method. Place the fingers of the left hand over the posterior portion of this part of the bone, including the angle, with the thumb on

the anterior portion. Place the fingers of the right hand under the base of the body of the bone and the thumb of this hand on the molar or bicuspid teeth. If force is now exerted, mobility will be discovered if fracture is *present*.

TREATMENT.

The treatment of fractures of the mandible, if there is considerable displacement, offers difficulties quite equal to similar injuries of other bones. The surgeon is handicapped in his treatment of most jaw fractures, because no easy universal method of splinting or bandaging is applicable for immobilization. In cases where there is little or no displacement simple appliances, such as the four-tailed bandage, are quite sufficient; indeed in a few fractures in which there is little or no laceration of the periosteum, there will be no displacement and no appliance is necessary, provided the patient is careful to abstain from use of the jaw in mastication.

Dental science has added much to surgical technique in treatment of fractures of the jaws. Oral splinting was first suggested through this source. Owing to the nature of the conditions in mandible fractures external splinting is not practicable, and oral splints, if employed, must be made for each patient, since the shape and size of the teeth differ in each case, and the splints are of necessity attached to these organs.

Splints.—Many forms of oral splints have been employed, most of them complicated, unhygienic and difficult of construction. It is needless to say that the less complicated the staying appliance if effective the better. The older forms of splints were of the kind known as interdental splints. What is meant by an interdental splint is an appliance made to cover the teeth of both the upper and lower jaws. Such splints should never be employed. In addition to the fact that they are unhygienic and difficult to construct they separate the jaws when applied. Therefore there is danger that they may cause distortion, preventing nice adjustment of the ends of the fragments. They are absolutely contraindicated in fractures posterior to the second molar, as the opening of the jaws tends to separate the upper margins of the fragments, leaving a V-shaped space with the lower border of the bone only in contact. If union takes place under such circumstances the teeth will not occlude. If splinting is resorted to I am of the opinion that but two forms of splints are permissible; viz, one composed of vulcanite or metal to cover the lower teeth, with but a thin layer of material over their occlusal surface, and this surface so formed to permit a correct occlusion with the upper teeth. This splint is secured to the teeth by cement. It completely immobilizes the fragments, allows free use of the jaw and permits mastication of soft food. This splint is known as the Heath splint.

The other splint referred to is the author's splint. It is made of vulcanite and so constructed that it is accurately adapted to the lingual surfaces of the teeth. It is secured to the teeth by wires, holes being drilled in the splint to receive them. This splint is not cumbersome; it

permits, if well secured, free movement of the jaw, and the occlusion of the teeth may at all times be observed. No form of oral splinting is applicable if the line of break is posterior to the second molar, since there must be two or more solidly set teeth in each fragment of bone to support the splint; one tooth only is not sufficient.

All oral splints are formed on plaster casts of the teeth. If the teeth are out of alignment, the casts must be reconstructed. This is accomplished by cutting the cast of the mandible in two on a line with the break or breaks, as the case may be, and accurately occluding the teeth of these parts with a cast of the teeth secured of the maxilla. The two or more parts of the mandible cast are now joined by the application of soft plaster. The result is a perfect restoration of the alignment of the teeth of the fractured lower jaw, upon which any form of splint decided upon may be constructed.

Wiring.—If the break be posterior to the second molar, including the angle or any portion of the ramus, a better method than splinting is to wire the teeth of the mandible to those of the maxilla. This simple method was introduced by me in 1882. It is a method which may be employed by any surgeon, independent of the dentist. German silver, phosphor bronze or soft iron wire may be used. Silver is too soft and too ductile. Wires are passed around the necks of several teeth on each side of the mandible. The two ends of each wire are twisted so that it fits the tooth tightly. A similar number of wires are placed on corresponding upper teeth. The teeth of the mandible are now accurately occluded with those of the maxilla and the wires of the lower teeth secured to those of the upper by twisting. This holds the fragments of the lower jaw in correct apposition and secures perfect occlusion of the teeth. I know of no method better adapted for the treatment of most cases of mandible fractures than this if a sufficient number of firmly set teeth remain in the jaws. Objections may be urged against this method. 1. The danger to the patient in case of emesis. 2. The supposed difficulty of the patient's taking nourishment, and 3. the inability to cleanse the lingual surfaces of the teeth. If the teeth are not wired until the stomach is freed from solid food, the danger from vomiting is slight. I have never seen a case in which there was not sufficient room, from the loss of a tooth or from space between the upper and lower teeth, to permit the patient being fed on liquid food. It is true that with this treatment, the lingual surfaces of the teeth cannot be brushed, but these surfaces are never cleansed by many and but indifferently by the average individual.

Wiring through the Bone.—Owing to infection or to osteogenetic inactivity, from one cause or another, nonunion may result. In that case wiring through the bone may be desirable, not only for the purpose of immobilization, but to stimulate the bone to greater activity for repair. This treatment may also be necessary in edentulous cases, or when no one method will suffice, as in multiple fracture, in conjunction with splinting or wiring of the teeth.

Bandages.—Bandages, as a rule, unless there is no tendency to displacement, are insufficient. The tendency of bandages in most cases, if sufficiently tightly applied to be effective, is to displace the fragments. No boot or outside splint supported by bandage, can be so well adapted to the contour of the jaw as to immobilize the fragments, if the line of break be such as to permit them to slide upon each other. Plaster of Paris bandages are not much more efficient than the ordinary bandage. The four-tailed bandage affords a good temporary support for the jaw until a better method may be constructed.

HYDROTHERAPY IN ACUTE DISEASES.*

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Two therapeutic maxims, hoary with the age of centuries, but vital with imperishable truth, are my guides in the management of acute diseases. Hippocrates taught twenty-three centuries ago "Nature Heals." The neglect of this grand therapeutic truth has filled more graves than all the battles of history, and its tardy recognition during the past half century has saved more lives in acute diseases than all the drugs in the materia medica. Another maxim of this wisest physician of all time has received experimental and clinical confirmation in recent times, but has not been so generally accepted.

Hippocrates taught also, that "Cold water warms," implying that it is not an antipyretic or sedative but a stimulant. Neglect of this truth has permitted thousands to die; its general recognition for which I have been striving for a quarter of a century would add vastly to our therapeutic resources for strengthening the defenses of the body against the pathogenic organisms which render many acute diseases fatal. With the single exception of malarial fevers, more acute diseases may be carried to a successful issue by the judicious application of water than by all known drugs.

There are several obstacles to the general acceptance of hydrotherapy in acute diseases. First, confusion in technique; second, the antithermic conception of cold baths; third, fear of the so-called shock. Rise of temperature being the chief manifestation in acute diseases, cold baths have appealed to the medical mind as the most obvious mode of reducing it. Their rise and fall in the estimation of physicians may be clearly traced to their being used rationally or empirically. Although the most reliable and largest statistics testify to their pre-eminent value I would not plead for your acceptance of hydrotherapy in acute diseases on these empirical grounds alone. This would be an insult to your intelligence and contrary to my method of presenting the subject. Unfortunately, however, this is the basis upon which nearly every author presents the application of water in acute diseases. Cold baths are almost invariably

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classed among remedies for pyrexia in the text-books and their modus operandi is very rarely mentioned. The result is an absolute misunderstanding of their true action, frequent failure to obtain their legitimate effects and their consequent abandonment.

These difficulties can be removed by teaching in our schools the rationale of their action in health and disease, and by insisting upon the clinical truth that only by exact technique and careful watching of the indications and of the reaction may exact results be obtained. Little progress will be made until such terms as cool water, cold water, warm water, hot water are avoided in prescriptions and in their stead are stated the exact temperature and precise technique. Water should be designated as cold or warm when it is below or above the temperature of the covered skin, which in a normal subject is about 92 degrees Fahrenheit, and in fever subjects higher. My reason for adopting this rule lies in the hydrotherapeutic law that the *shock from cold water and the subsequent reaction, which is its object, are in proportion to the difference between the temperature of the skin and that of the water used.* When water having a temperature in the neighborhood of 92 degrees Fahrenheit is applied to the skin its effect is neutral, because the thermic irritation is absent. Guided by physiologic and therapeutic considerations I have established a neutral zone—between 90 and 100 degrees Fahrenheit. Water below this zone evokes refreshing or stimulating effects; water above this zone produces sedative or relaxing effects. When the body is immersed in water at a temperature ten degrees below the neutral zone as is done in some acute diseases, a positive irritation of the sensory terminals ensues; a still lower temperature produces greater thermic excitation and in addition an emptying of cutaneous vessels. The lower the temperature of the water is than that of the skin, of course, the greater the sensory excitation. This, then, is one mode of dosage of water applied externally. Another mode of dosage is by changing the duration of the treatment. We know empirically that if water, say 15 degrees or more below the temperature of the skin be applied to the latter briefly, reaction follows quickly and that the effect is stimulating, as is familiarly noted in sprinkling the face of a fainting person.

It does not appear to be so generally known, however, at least the fact appears to be too often disregarded, that the same temperature of water applied to the same person upon a larger surface, as in the bath tub, would cause depression to ensue if its duration were unduly prolonged.

What is the object of applying water below the temperature of the skin in fevers? The chief aim is to produce a reaction which may inure to the invigoration and refreshment of the organism and thus enhance its capacity to resist the depreciating lethal toxins circulating in the blood. Inasmuch as the intensity, duration and efficacy of this reaction are in proportion to the so-called shock produced by the cold procedures, it is meet that we discuss the rationale of this process, in order that a working rule for adapting them to varying conditions may be formulated. Like all peripheral excitations that of cold applied through the medium of water is conveyed upon sensory tracts to the central nervous system

and returned upon motor tracts to various parts of the organism. This is a trite physiologic fact. The constricting action of cold is also well known but the rationale of its potent influence upon the circulation, when *applied through the medium of water* is not so well understood as it deserves to be. Permit me, therefore, to briefly review this important subject. For purposes of more clear elucidation I recognize two phases of reaction after cold procedures, namely, a neural and a vascular reaction.

1. A manifestation of the neural phase is observed in the familiar process of sprinkling the still-born infant with cold water. We are taught that the local excitation of the sensory cutaneous terminals is conveyed to the central nervous system and reflected through the vagus and other nerves to the inspiratory muscles. This interesting process illustrates the absurdity of regarding shock from cold water as "a depression of the vital powers"—a superficial view which has often forbidden its application in disease. Rather should this shock be regarded under another definition, "an unpleasant surprise." *Cold water evokes a shock which surprises the sensory terminals in the skin and thus acts as a veritable stimulant to the central nervous system.*

2. The vascular reaction is familiar in its simplest form in the application of cold to a frost-bitten part. Here, too, cold acts as a stimulant, arousing the congested and paretic vessels to vigorous action, and restoring normal circulation.

In the application of cold water in acute diseases a combination of the neural and vascular reaction is utilized. Their rationale is proportionately the same in the mildest procedure like an ablution, as in the more intensely acting tub bath; hence *it presents an absolutely scientific basis* for our prescription of hydrotherapy in acute diseases. As an example, let us see what is the *modus operandi* of a full bath at 70 degrees Fahrenheit? It is well known that sudden immersion of a fever patient into water at this temperature evokes a so-called shock.

This is as I have said, a surprise to the sensory terminals: nothing more if applied judiciously, a *vast* deal and *sadly* more when it is applied as recommended in many text-books in the form of ice water baths, or ice-packs for hyperpyrexia. Such procedures are indeed capable of producing a shock which depresses the "vital powers," but such irrational use of water is a no more reasonable objection to the cold bath than would injudicious use of morphia to deep narcotism be an argument against the judicious application of this valuable drug. Intelligently applied thermic stimulation of the peripheral sensory terminals by cold arouses the higher centers of the entire nervous apparatus into activity.

What are the practical therapeutic effects of this so-called shock? First and foremost, refreshment, invigoration of that part of the organism which is most essential to the functioning capacity of all the life sustaining organs and which in infectious fevers especially receives the chief brunt of the attack. The latter is evident in typhoid fever, for example, in the dull headache, apathy and general adynamia which characterize the first stages and which finds more pronounced expression in

muttering delirium, coma-vigil and other manifestations in the later stages. As the parched flower wilting under arid summer heat is refreshed by a cooling shower, so is the fevered patient restored by a properly administered cold friction bath. The eye brightens, the countenance loses its apathy, the intellect clears, the entire aspect of the case is changed, temporarily it is true, but the favorable change may be maintained by judicious repetition until the danger is past. As Musser and Wilson, of the Philadelphia schools; Osler and Barker, of Johns Hopkins University, and others have said: "Typhoid fever presents an entirely different picture." This is the effect of the nerve reaction after cold procedures.

The vascular reaction after a bath of 50 degrees F., though less pronounced after milder procedures, is of equal significance and import and is more enduring. What is the rationale of this interesting process? Formerly I taught that the action of water below the temperature of the nude skin produced contraction of the cutaneous vessels, driving the blood from the surface, and upon withdrawal of the cold the cutaneous vessels dilated, producing a tonic hyperemia. This rationale, first suggested by Winternitz, the father of modern Hydrotherapy, was controverted by Mathes, of Jena, now in Koeln, who held correctly that when the muscular walls of a vessel are stretched beyond their normal calibre they are in an atonic condition and that therefore the reaction after cold procedures could not be tonic. Led to investigate this apparent contradiction between the clinically correct view of Winternitz and the physiologically correct view of Mathes, I discovered that both based their deductions on the false premise that the cutaneous vessels which are contracted by a cold bath are provided with contractile muscular walls. The fact is that by far the larger vascular area in the skin consists of capillaries, that these are mere endothelial tubes filling the papillary spaces in enormous tortuous reduplication and that the arterioles which are located in the sub-cutaneous tissue lie probably out of reach of any but the most intense cold procedures, which are not followed by good reaction. Cyanosis of the skin under an icebag, and cutaneous pallor in an intensely cold bath illustrate my meaning.

The skin is permeated by unstripped muscular fibres interwoven with white and yellow elastic tissue, varying in quantity between the superabundance in the scrotum and entire absence in the palmar and plantar surfaces. This anatomical peculiarity of the skin endows it with a function hitherto not recognized, as I shall presently show. These muscular fibres, called by Unna, who has probably given us the clearest idea of the minute anatomy of the skin, oblique tensors of the cutis, contract diagonally through the thickness of the skin just as do the arrectores pilorum, which are more familiar to us. Tomsa has shown that "when the arrectores contract, causing cutis anserina, they draw the skin from without inward, embracing in their action the terminal portion of the blood supply of the papillary body, and thus emptying the smallest blood vessels in such manner as may best conduce to normal circulation." Unna also insists that "the action of the arrectores muscles is not con-

fined to the hair follicles, but that they are intimately involved in the movement of the blood and lymph." Guided by the minute anatomy and physiology of the muscular structures of the skin, which these investigators have developed and others have confirmed, I hold that these structures replace the muscular and elastic coats which are absent in the papillary vessels, and that by their contraction under cold, large masses of blood are driven or squeezed out of them. Differing from arterioles, the papillary vessels are not *surrounded* by muscular fibres which would dilate under the vis a tergo of increased cardiac action following contraction induced by cold. On the contrary these vessels are subject only to *compression* by the muscular structures of the skin when the latter are constricted by cold water. It follows that there is not an atonic giving way of muscular coats as would ensue in arteries but a *restitution of the normal elasticity of the skin muscles* when their contraction gives way under the inflow of warm blood driven abundantly into the papillary vessels under the enhanced vasomotor activity aroused by the impact of cold. There is no possibility of stretching these muscular structures beyond their normal limit and thus producing a condition that would involve relaxation or atony, since they are firm and do not envelop or surround the vessels. When the height of reaction is reached and the papillary vessels are filled to repletion by the enhanced cardiac impulse, these muscular fibres stand like a wall, limiting the farther dilatation of the vessels; they increase vasomotor activity in all parts of the body by increasing the resistance at the periphery throughout the enormous vascular area of the skin. The experiments of Bier and Ritter have thrown light upon a hitherto not easily explicable phenomenon, viz., the bright red hue of the skin after correct application of cold water. Ritter called attention to the fact that when the skin vessels are so intensely contracted by freezing with ethyl chlorid that it is blanched, the return blood is of arterial ruddy color, even when the arm experimented on has been made cyanotic by constriction with a rubber bandage. I have demonstrated this remarkable phenomenon to my classes. All anatomical and physiologic facts point to the correctness of this view of tonic reaction after cold baths and they all explain the atonic reaction after warm procedures.

The contracted muscles of the skin drive the blood from the surface, which becomes pallid, there may be shivering, which indicates that the temperature is dangerously below the patient's reactive capacity. The barrier presented by the enhanced tonicity of the skin to the onflow of blood into the papillary vessels, together with the excitation of the vasomotor center, evoke an increased cardiac impulse. The temporal pulse becomes more full, increases in tension and diminishes in frequency; it loses compressibility and diastolicity, if present. Friction with a coarse sponge stimulates the contracted cutaneous muscle fibres, inducing release of contraction; it prevents collapse and shock, which may follow the contraction of the deeper seated vessels under prolonged immersion.

Therapeutically the nerve reaction differs from the vascular reaction. While nerve reaction may be easily aroused in mild types by moderate water procedures as sprinkling or sponging and even in severe toxic conditions very brief applications, like affusions of fifty degrees, may restore consciousness, such effects are evanescent and require frequent repetition. To render hydrotherapeutic procedures effective and enduring, procedures of some duration are demanded and these are especially urgent when the vascular reaction is to be aroused. For this purpose immersion of the entire body produces the best results, as is evident from the rationale.

In typhoid and other infectious fevers, not only is the ganglionic supply of the muscular cutaneous apparatus poisoned more or less, but the vasomotor system is depreciated; the blood flows sluggishly through the peripheral vessels. Stimulation of the heart's vis a tergo by alcohol or digitalis is like spurring a jaded horse: the heart is tired out, the entire arterial system lacks the necessary vigor to overcome the semiparetic condition at the periphery. As Hobart Hare has so well said, the heart may be compared under these conditions to a locomotive upon a slippery track, an increased supply of steam causes the wheels to revolve more rapidly without progression; the engineer sands the track, the resistance thus produced may be likened to the contraction of the vessels, compression. I would term it, in the cutaneous periphery, which aids the crippled vasomotor system and removes circulatory depreciation. It is to be remembered that the peripheral vessels in all the organs also suffer from this depreciation. As a result we have in mild cases shallow and rapid respiration, with imperfect interchange of gases manifesting itself in severe cases by cyanosis and later by hypostatic pneumonia which kills. The depreciation of the peripheral vessels in the kidneys produces diminution in quantity and toxicity of the urine with death from imperfect elimination. The depreciation of the peripheral circulation in and around Peyer's patches leads to increased ulceration, hence hemorrhage, perforation and death. The same condition in the stomach and upper intestine causes inactivity of the glandular supply, manifested by the dry tongue and abdominal distention which preclude nutrition and also lead to a fatal issue.

How remarkably all these death dealing complications or rather ultimate sequences of infectious fevers are forestalled by judiciously applied hydrotherapy, those who have the courage of conviction testify in all countries. The statistics of the aged but still earnest Dr. Vogl, formerly Surgeon-General of the Bavarian Army, from whom I received a monograph on this subject only a few weeks ago, prove it conclusively, as do the writings of Glenard, who is better known in this country as the discoverer of enteroptosis and who as a prisoner of war in Stettin learned to appreciate the Brand bath and became its ardent propagandist in Lyons and Paris. This prophylactic action upon the lethal factors in typhoid fevers is also confirmed by Hare, of Australia, and by many other clinicians in all parts of the world.

The inhibitory effects of the strict cold friction bath upon the lethal factors in typhoid fever cannot be too urgently emphasized, *for herein lies its superiority over milder baths*. Disregard of this essential point, established by large and reliable statistics, has resulted in missing the chief essentials of the cold bath and consequently in needless loss of life. In Germany, for instance, the *methodical cold bath first demonstrated by Ernst Brand, of Stettin*, as having enormously reduced the mortality of typhoid fever, has fallen into desuetude because the real aim and striving of this earnest man have been strangely misunderstood in his own country. Lest I be charged with injustice to our learned colleagues in that country, I offer the statement of the eminent teacher, Curschman, which is copied from Nothnagel's *Cyclopedia*, translated by Stengel and edited by Osler (pages 455 and 458):

At first under the profound influence of the labors of Brand and his successors and in consequence of the overestimation of the significance of febrile elevation of temperature, cold baths were preferably given at temperatures as low as 5 to 10 degrees C. (44 to 50 degrees F.), etc.

From personal correspondence with this lamented but misunderstood benefactor of suffering humanity I know that he never advised such low temperature and that this statement of his views and practice is absolutely incorrect. I hope it is a misprint because it does not seem possible that so learned a man could express such an opinion. Common sense would lead one to seriously doubt that any conscious human being would permit himself to be immersed for fifteen minutes in water 6 degrees C. (44 degrees F.) That such misconception of Brand's views and practice by the leading clinical teachers in Germany has neutralized all the labors of Brand and the wonderful statistics (the like of which has never been in therapeutics) of the earnest, patriotic and sympathetic Vogl, of Munich, is but an evidence of the blind following of authority which has cost so many lives in the dreary past and a repetition of which in this enlightened day seemed impossible. Far be it from me to speak of the renowned Curschman in captious criticism, especially as I am indebted to him for courtesies during a visit to his clinic in 1909, and I admired the excellent practical instruction in hydrotherapy which is given by Dr. Steinert, his chief of clinic. I stand on the record in defense of Ernst Brand who at the time when Liebermeister and other excellent clinicians were teaching that the cold bath was chiefly effective as an antipyretic, dared to insist that it is the chief function of the cold friction bath to arouse the central nervous system and to sustain the heart. It is the sad irony of history that the highest authority on typhoid fever should misconstrue and unwittingly misrepresent the teachings for which Brand fought so valiently and the success of which he proved to the satisfaction of the highest authorities.

In 1887 Guttstadt, who presided over the Imperial Statistical Bureau, stated in *Verein für Innere Medizin* in Berlin "An important factor in the diminution of mortality is the more successful treatment now used, especially Brand's method." Professor Gerhardt opened his course of lectures in the Berlin Uni-

versity in 1896 on the Prognosis of Disease, stating that "Prognosis of Typhoid Fever has been changed, the mortality has been reduced by the Brand bath to one-fourth."

What is the status of this method to-day in Germany?

In a Symposium published by *Die Deutsche Klinik* in 1908 the Brand bath is barely mentioned. One practitioner stated that during the Franco-Prussian war its results were so marvelous and the aspect of the cases was so completely changed by it that the medical inspectors doubted the diagnosis until convinced by the records, but that he has abandoned it in private practice because it is too heroic!

In the absence of German statistics of the Brand method in civil hospitals, I offer a comparison of statistics from American and Australian civil hospitals with the statistics of Curschman's own hospital. This is the only crucial test, and the numbers are large enough to make the comparison fair. In the "*Statistik der im Krankenhaus St. Jacob in Leipzig in den Jahren 1893 bis 1907 behandelten Faelle von Typhus Abdominalis*—Inaugural Dissertation von Karl Pierkowski 1907. page 11." it is stated that "there died among 1,229 patients 231, the total mortality being therefore 18.8 per cent."

On the other hand we find in W. Gilman Thompson's *Practice of Medicine* the record of 900 cases treated according to Brand in the Presbyterian and New York Hospitals, with a mortality of 7.76 per cent—and in 368 cases reported by W. Hanna Thomson from the Roosevelt Hospital, a mortality of 6.8, and in 1,902 cases reported by Hare from the Brisbane Hospital, Melbourne, a mortality of 7.05.

The condemnation of the Brand bath is proved unjust by the only crucial test—the bedside.

The technique as I obtained it from Brand himself is as follows. When the axillary temperature taken for ten minutes with a closely held thermometer registers 39.5°C (103°F.,) (the rectal temperature is more reliable and I use lately 103°F. as a guide) the patient is lifted into a tub two-thirds full of water not below 18°C. (64.4°F.) nor above 20°C. (70°F.) in which he is rubbed gently for fifteen minutes. During the intervals a compress of three folds of old linen wrung out of water at 60°F. and covered with thin flannel is placed over the abdomen and held firmly in place by a thin flannel band covering it completely. This is renewed every hour if warm. The bath is repeated every four hours when the rectal temperature is 103° or over.

I would not criticize those who see fit to deviate this technique. Each physician must use his own judgment, but I do emphatically deny the fairness of judging the Brand method by any other standard than this technique and I demand in justice to the deceased author of this great life saving procedure, that statistics be given to prove the fallacy of his deductions. Such statistics have not yet come within my observation. Ex cathedra statements without bedside proof do not justify the abandonment of a measure which has been demonstrated as valuable in a record of cases of patients of the same age, sex and occupation, under the same environment during a period of forty-three years; a veritable therapeutic control experiment the like of which is not found in medicine.

Nor are the simple assertions of the most conscientious colleague to be accepted in opposition to the unprejudiced statistical evidence of Loomis and Thompson, giving a reduction of 50 per cent. in the New York Hospitals, and of my own personal and collated statistics (*The Principles and Practice of Medicine*, third edition, page 202) which show a mortality of 20.76 per cent. for the expectant treatment (125,330 cases) and 4.26 per cent. for the Brand bath (7,426 cases).

To those who avoid this method because it is too heroic I would say: If a life may be saved by amputating a limb would you hesitate to adopt this thousandfold more heroic procedure? Is the physician true to his sacred trust if he abandons the life-saving cold friction bath because it distresses the patient and his family? Escaping this responsibility may be as fatal to the patient as it is pusillanimous in the doctor. My course, when objection is made is to enlighten the objectors on the difference in the chances of recovery. Though I have never failed to overrule the most imperative opposition, I can well conceive the unavailability of escape from this dilemma. In that event the nearest possible substitute to the Brand bath may be safely adopted. The physician must never forget, however, that mildness of the early stage does not guarantee the later absence of lethal complications and that these may be prevented by correct bathing.

Ablutions with a large sponge beginning with water at 70° F. reduced each time until 60 degrees are reached and accompanied by good friction, repeated every two or three hours, offer a good substitute. The friction sheet bath, fully described in my book, approaches the strict cold friction bath very nearly. It is not the cold wet pack commonly used in hospitals for temperature reduction, but a far more perfect procedure for refreshing, calming and strengthening the patient. The friction sheet bath may be repeated every three hours. To abandon the Brand bath on account of cyanosis, extreme chilling during and prolonged shivering after the bath, is imperative. When these manifestations cannot be prevented the addition of CO₂ (with the Zeo bath or Cassebeer, a Triton preparation) often produces the most striking effects on the reactive capacity of the patient and enables one to continue the bath of low temperature. When this cannot be done, I advise shortening of the bath which promotes better reaction. To shorten the duration of the bath is far better than raising its temperature; the more intense the thermic excitation the better the reactive stimulation. When the latter has been reestablished, the bath may be safely and cautiously prolonged to fifteen minutes.

My procedure is as follows: When a rectal temperature of 103° F. or over without definite diagnosis is present, the patient is placed in a small rocking chair wrapped in a blanket and linen or soft cotton sheet, slid into the bath room, undressed and bathed with friction in water at 90° F. for ten minutes. He is dried with the sheet, put to bed and his temperature is taken in half an hour. Three and a half hours later if his temperature has not fallen, he is again bathed with friction in water at 85° F. The bath is repeated every four hours (or later if temperature in rectum indicates) in water five degrees lower each time until 70° F. are reached. If one of these baths has reduced the rectal temperature (not the mouth or axilla temperature) two degrees or more, the diagnosis of

typhoid fever may be doubted; the larger the reduction of temperature in this early stage the more negative is the diagnosis, the smaller the reduction the more positive it is. When the diagnosis is established the friction bath at 70°F. is continued every four hours during the entire case. In most acute diseases a compress at 60°F. is placed on the abdomen and renewed every hour and at least two ounces of water at 40°F. are administered (and to be noted on the record) every two hours. The patient is not disturbed if he is sleeping normally.

In pneumonia I have discontinued the tub bath except in children in whom pleurisy is often absent. A chest compress of 60°F. is applied so as to cover the entire chest and stimulate the scapular, epigastric and abdominal reflex areas, described by the physiologists as connected with the third to the seventh dorsal ganglia which are said to control the pulmonary circulation. This is renewed every hour when reaction is assured by the warming of the wet linen. Here too I have noted an enormous increase of the quantity and toxicity of urine under the regular administration of small quantities of ice water. In the broncho-pneumonia of children, idiopathic or as complication, the graduated friction bath of 90 to 80 may be added to the compresses with often positive advantage. In scarlatina and measles the stage of the disease governs my hydrotherapy. In the prodromic stage when cyanosis indicates intense toxemia a bath of 105 or more for two minutes arouses the central nervous system, produces a cutaneous hyperemia which must not, however, be permitted to become atonic and dangerous because blood pressure is reduced by its prolongation. If the eruption does not show improved circulation, the little patient may receive one or more basins of water at 50° or 60°F. over the shoulders before removal from the hot dip. This treatment will surprise those who have seen these desperate cases succumb to eclamptic attacks in the eruptive fevers and in broncho-pneumonia.

In the ordinary forms of the exanthemata two or more baths a day of 100° reduced to 90°F. or less are useful, refreshing the patient, producing sleep and preventing complications. In hyperpyrexia the prolonged bath, one hour or longer at 100° or less but not below the neutral zone, 90°F. , accomplishes remarkable results. If delirium or other manifestations of nerve depreciation be present, the continuous bath may be terminated with the affusions already referred to. A hammock constructed of a sheet secured by wet clothes-pins as described in my book, makes the patient more comfortable than he would be lying on the bottom of the tub.

In conclusion I would plead for closer study and more thorough teaching in our schools of the physiologic and therapeutic action of water. I would advise the practitioner to seek information only in works written by men who have had bedside experience in acute diseases, and who furnish the rationale of hydrotherapy in these cases, with precise directions of the technique, temperature, duration and frequency of repetition. Until you have done this I urge on you to avoid hydrotherapy altogether, for it is a double-edged sword for patient and physician alike.

135 W. Seventy-third Street.

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AUGUST, 1910.

SHOULD THE PRESIDENT OF THE STATE SOCIETY BE A PERMANENT, SALARIED OFFICER?

EX-PRESIDENT WIGGINS' SUGGESTIONS.

In our society columns will be found an interesting communication from the St. Clair County Medical Society, being a report of the meeting of this society on July 7, when it was addressed by ex-President J. L. Wiggins. Dr. Wiggins, after having spent a year in the active service in the society, now comes forward with the suggestion that the affairs of the state could only be properly attended to when all the principal officers are made permanent, and paid for the time and attention they give to the duties of the office. After the president's address the matter was seriously considered by the society, and Dr. Fairbrother, an old, valued and conservative member of the society, offered resolutions to the effect that the office of the president of the State Society, be a salaried office and be held for a term of four years. The motion was unanimously adopted.

This very important communication should be considered by every reader, and the subject brought to the attention of the various county societies, before the annual meeting of 1911.

THE GOVERNORS AND MEDICAL MEN.

In our hearing a certain chief executive of one of the leading states of the Union volunteered a statement that when the governors of the Union met a few months since on board a Mississippi steamer and exchanged confidences on the troubles of executives, the subject of the doctors came up and it was almost unanimously agreed that these gentlemen had more difficulty in handling affairs with which the medical men have an interest than with any other part of their duties. We therefore hope that our readers will pity the sorrows of the governors, while we will take occasion to consider acts of the governors of some of the states in their dealings with the medical profession.

First we will call attention to that so-called reform governor of New Jersey, known as J. Franklin Fort. This well known member of the political profession took occasion sometime since to publicly attack the veracity of Dr. L. M. Halsey, chairman of the Legislative Committee of the Medical Society of New Jersey. This flagrant insult was telegraphed over the country in such a way as to bring the blush of shame to readers who were interested in the medical profession, and who were confident that only part of the truth was told in the telegram. Copies of the *Journal of the Medical Society of New Jersey* were eagerly watched for, in order to ascertain the truth of this interesting affair. It was found on page 627 of the May, 1910, number. We quote the first account as it appeared in the columns of the daily press. Then follows Dr. Halsey's statement, proving that Governor Fort had made all sorts of promises to obtain the support of the physicians prior to his election, and had constantly failed to keep these promises, as is the practice of gentlemen of his ilk.

THE MEDICAL PRACTICE BILL.

[From the *Daily State Gazette*, Trenton.]

With a declaration that Dr. Luther M. Halsey, chairman of the legislative committee of the State Medical Society, had lied about him before he was elected Governor, and during his term of office, Governor Fort brought to a sudden end yesterday a hearing which he was giving upon Assemblyman Ramsay's bill to regulate the practice of osteopathy in this state. The Governor's outbreak of anger was the climax of a hearing at which physicians of the old school had clashed many times with osteopathic practitioners who opposed the bill.

The New Jersey Medical Society was represented by Dr. Lewis, a professor of medical jurisprudence in one of the New York Colleges. In urging the Governor to sign the Ramsay bill, Dr. Lewis quoted the Governor as having declared in a public speech that he would do everything within his power as Governor to maintain the high standards of the medical profession in New Jersey. Dr. Lewis construed these remarks as a promise by the Governor that he would give favorable consideration to such a bill as was then under consideration.

"I never made any such a remark as that," said the Governor with some warmth, demanding from Dr. Lewis the source of his information. "I have it on very good authority," replied Dr. Lewis. "Who is your authority?" persisted the Governor. "Dr. Halsey," was the answer. "I thought I was getting pretty close to the source," replied the Governor hotly. Turning toward Dr. Halsey, at whom he pointed his finger, the Governor added: "You have been lying about me. This is not the first time, either. You lied about me before I was candidate for Governor and you have continued doing so ever since I have been in office. You are the only man who has tried to bulldoze me into signing this bill." Dr.

Halsey turned white under the onslaught of the Governor, but as he arose to reply the commotion in the executive chamber became so great that his voice was drowned. The Governor immediately declared the hearing at an end and retired to his private office, while the delegation dispersed.

Earlier in the hearing Governor Fort had had some sharp words with Dr. William J. Schauffler, of Lakewood, a member of his military staff and his family physician while staying at Lakewood.

Dr. Schauffler had cited an instance in which an osteopathic practitioner had made a wrong diagnosis of a case and had intimated that they were not reliable. Governor Fort declared that these remarks were ridiculous and that Dr. Schauffler himself was in the habit of recommending his own patients to consult osteopaths. As an instance the Governor said that when he had broken a rib last year, Dr. Schauffler had sent him to consult an osteopathic physician.

COMMENTS BY THE PRESS—GOVERNOR FORT USES LANGUAGE.

[From the *New York Times*, April 13th.]

It is hard indeed, to understand why Governor Fort, of New Jersey, should have been so savagely indignant in his denial that he once promised to do anything in his official power to maintain the high standard of the medical profession in his state. To have made that promise would not have been criminal—it would not, so far as we can see, have even savored of impropriety. If the Governor ever had any talk on the subject, with real doctors, he hardly could have said anything less, and his application of the short and ugly word to a doctor who told another doctor that he did say just that is certainly a most mysterious manifestation of anger.

What did the Governor say—that he wouldn't use his power in that way, but would use it in some other—to lower the professional standard, for instance? But that supposition is a little too absurd—of course Governor Fort said nothing of the kind. His excitement arose, it seems, in the course of a hearing on a bill regulating the practice of osteopathy in a way which the osteopaths do not like and the regular doctors do. Governor Fort's sympathies, one regrets to see, are on or tend toward the heterodox practitioners. Curiously enough, he thinks it is a sufficient answer to those who would establish a distinction between medicine and osteopathy to say that this or that real doctor occasionally sends a patient to an osteopathist for treatment. He is quite mistaken, and it is no answer at all, for a real doctor might very well admit that the manipulations to which the osteopathists resort would have beneficial results in properly selected cases.

That would be very far from admitting that osteopathy is anything more than an elaborate system of massage or that it is right treatment for all diseases, as is claimed by its followers. What the real doctors do, without exception, assert, is that it is an utterly wrong treatment for many diseases, and in New York as elsewhere they demand that these too ambitious masseurs be kept where they belong. There they would be, or might be, of considerable use, but without due regulation they are undoubtedly dangerous to public safety. It is only the due regulation, we are sure, that the New Jersey doctors ask, and it is a great pity that Governor Fort seems indisposed to help them get what they want.

[From the *New York Sun*, April 14, 1910.]

It is manifest that the relations between Governor Fort and the New Jersey Medical Society are sorely strained, and the result, we suppose, will be another victory for the osteopathists.

At the hearing on the Ramsay bill, which is intended to regulate the practice of these specialists, the council for the Medical Society attributed certain pledges or promises to the Governor, on what he conceived to be "very good authority." The Governor, with some heat, demanded more exact information, and learning that a certain doctor of Williamstown was the authority in question, he turned upon that unfortunate gentleman and delivered himself as follows:

"Oh, I thought I was getting pretty close to the spot! You have been lying about me and this is not the first time. You lied about me when I was a candi-

date for Governor and have been doing so ever since I have been Governor. You are the only man that has tried to bulldoze me into signing that bill."

From this it might be suspected that the Governor had been charged with some infamous enterprise, yet, notwithstanding the vehemence of his denial it seems he was only accused of having said in a public speech that he would "try in his position as Governor to maintain the high standard of the medical profession of New Jersey."

Apparently he has no such intention, and any one who accuses him of the least desire to maintain high standards is a liar. It is clear, then, that in Governor Fort the "bloodless healers" have found a good friend.

Did we have the space it would be interesting to detail how Dr. Halsey, in a letter to Governor Fort, dated April 20, 1910, calling down the honorable gentleman for his slander, and how the Honorable Fort humbly replies under date of April 22, trying to crawl out from under the statement and square himself with the medical profession of New Jersey. That he will be able to do this seems very problematic, since nearly every county society in the state has taken up the matter, and passed resolutions of confidence in Dr. Halsey, and condemnation of the bogus reformer, Fort.

RESOLUTION ADOPTED BY THE MEDICAL SOCIETY OF NEW JERSEY AT ATLANTIC CITY, JUNE 28, 1910.

WHEREAS, At the hearing on the Medical Practice Bill, at Trenton, Governor Fort publicly questioned the veracity of Dr. L. M. Halsey, the chairman of our Committee on Legislation, and treated the representatives of our society discourteously by refusing a proper discussion on the merits of the bill, by uncereemoniously closing the hearing; therefore,

Resolved, That the Medical Society of New Jersey, in annual meeting assembled, hereby places on record not only an expression of perfect confidence in Dr. Halsey, but also of deep regret that the Governor of our state so lost control of himself as to reflect discredit upon his high office and dishonor upon the state; and moreover, that his actions have resulted in lowering the standards of preliminary educational requirements in New Jersey and the consequent loss of reciprocity between our state and the state of New York.

We now pass to Missouri, where a remarkable change is found in the political or social conditions of the people, which change it may be remarked is largely due to the profession of that great state. Formerly known as "Poor Old Missouri," the state was entitled to its name in many ways, but matters have changed, especially in the character of men who have held the position of chief executive in the past ten years. Not one of these executives has reflected more credit on the state than the present governor, H. S. Hadley. The remarks of Governor Hadley in his address of welcome to the American Medical Association in St. Louis, June 7, 1910, constituted a remarkable tribute to the medical profession. Governor Hadley was frank enough to say that the medical profession is setting an example to the legal profession, to which he belongs, and further said: "And if the other professions of this country—particularly my own—are to continue to rank among yours in respectability and public confidence it must enjoy the distinguished pleasure of imitating your example." He further said: "I have appointed, and I intend to appoint, on that board only members who receive the endorsement or

recommendation of the State Medical Association. You as a profession are able to put your own houses in order. You have cleaned up your own Augean stables by driving from your ranks the quacks and abortionists and the charlatans and the impostors. I want to say to you that the state board of health of the State of Missouri has been actively engaged on the firing-line, fighting a battle for a clean profession against the elements which foster disgrace and dishonor. In that regard I can say again, to the other profession, the legal profession, if it is to continue in public confidence and approval it must follow your example, because we have in our ranks quacks and abortionists and charlatans and impostors in our pettifoggers and shysters and ambulance-chasers, and a certain class of lawyers who are all the more disreputable because, with greater capacity for injury in our legislative and judicial lobbyists in eminent lawyers, who, in order to screen rich clients, violate the law and bring the legal profession into disrepute, securing for them immunity." Probably no chief executive of any state in the Union, unless it be Governor Hughes of New York, is now wider known or more highly regarded than Governor H. S. Hadley.

We next pass to Indiana, where there seems to be some trouble, as indicated by the following item copied from a recent issue of the *Lancet Clinic*. Just what the merits of this case are we do not know. Maybe the profession is at fault:

"Governor Marshall of Indiana, because of dissensions among the opposing factions on the State Board of Medical Examination and Registration, will try to make the members see that for the good of the medical profession in the state, and for the standing of the board, they should cease their wrangling. The word was sent as the result of the adoption of a petition when Dr. John F. Spaunhurst, osteopathist, was deprived of the privilege of examining forty-one members of the class in the subjects assigned to him. This is a result of the absurdity of recognizing sectarian medicine, and argues for a single board to examine upon all the medical subjects except therapy."

We now come to the State of Illinois, to consider the attitude of Governor Charles S. Deneen toward the representatives of the organized medical profession as represented by the Illinois State Medical Society. We approach this subject with a great deal of hesitation because of the peculiar conditions existing in Illinois, in a political way, at this time. Governor Deneen has for so long been positive in his statements that he would clean up the medical situation in this state that it is difficult for us to believe that he does not propose to make good. The state board of health is now composed of only three *de jure* members, none of them known outside of the county in which they live, and four *de facto* members, who in justice to themselves should either be reappointed or their successors provided. Among these four *de facto* members are Dr. George W. Webster of Chicago, acting president of the board, and Dr. James A. Egan of Springfield, acting secretary of the board, against

whom, especially the latter, so many complaints have reached our ears in the past ten years. The latest utterance of Drs. Webster and Egan in opposition to the report on the Carnegie Foundation was mentioned in the July issue of this journal. We understand that Governor Deneen has in the last ninety days renewed his promise to appoint four new members of the board, and pending action by the governor on this matter we withhold further criticism of existing conditions.

THE AMERICAN DRUGGISTS' SYNDICATE.

Mr. C. H. Goddard, signing himself Secretary of the American Druggists' Syndicate, is sending out letters to physicians in all parts of the country, making large offers of saving in connection with the sale of drugs, instruments, fixtures and supplies. As this is ostensibly for the protection of public health, the suppression of the nostrum evil and the increase of professional members, it is probable that a considerable number of our members will be attracted by the advertisement. In this, as in many other instances, we would suggest that our members "go slow" in patronizing such a scheme, as it appears "too good" on the face of it, and our information from druggists who are members of this syndicate does not correspond with the tempting offer made by Mr. Goddard.

THE STATE BOARD AND THE CARNEGIE FOUNDATION REPORT.

The squirming and twisting; the denial and acknowledgement; the air of injured innocence and the promise of reformation which the State Board of Health has put up in the last sixty days reminds us of one of the comic operas staged by Francis Wilson some years ago. Wilson taking the part of a hobo was brought before a judge on a charge of burglary. His plea was, "I am innocent;" "It is my first offense;" "I can prove an alibi." Again we may justly inquire, who is responsible for this *de facto* organization which continues to make Illinois the rotten spot of medical America.

The latest manifesto of the Board appears in the columns of the *Illinois State Journal*. This daily appears to have succeeded the monthly Bulletin as a convenient and ready medium to convey the peculiar views and defenses of the Board to the patient public. *The Journal* has one great virtue never possessed by the Bulletin. It appears regularly and has some actual news in the columns not devoted to the Board.

In order that our readers may know the workings of the master mind of the Board we reprint this account of his recent meeting.

Chicago, June 25.—Members of the Illinois State Board of Health, at their semi-annual meeting, hurled back at the Carnegie Foundation for the Advance-

ment of Teaching the report criticizing practically all the medical schools of Illinois and condemning some of them. The writer of the report was convicted, by his own statements, in the view of the health board, of a lack of knowledge of the conditions which he presumed to attack.

Nevertheless the board took cognizance of the criticism of the Council on Medical Education of the American Medical Association, which to a degree was similar to that of the Carnegie Foundation, and took steps to remedy the defects alleged to exist in certain of the Chicago medical schools, and also adopted a resolution, which had been in contemplation for some months, which probably will put the so-called light medical schools of Chicago out of existence, except as preparatory schools.

Secretary James A. Egan of the State Board laid before the members at a meeting in the Great Northern hotel that part of the Carnegie Foundation report relating to Illinois, but before he had proceeded far in the reading the board members, by a unanimous vote, ordered the report laid on the table, because, in the language of the motion, "it portrayed conditions which did not exist, and evidenced a lack of knowledge on the part of the writer of the laws of Illinois and the powers and responsibilities of the State Board of Health."

Especially exception was taken by the board to the charge that in not one of the eight medical colleges of Illinois condemned by the Foundation, but recognized by the State Board of Health, are "clinical opportunities furnished in proper abundance." This statement was characterized as "unworthy of serious consideration."

The writer of the report, Mr. Flexner, was accused by the State Board of Health of ignorance of the medical laws of Illinois. Mr. Flexner condemned the State Board for permitting medical colleges to accept as evidence of adequate preliminary education a certificate of examination of the state superintendent of public instruction, yet the state law prescribes that the state superintendent's certificates "shall be considered satisfactory evidence of preliminary education." This law, the members said, had been upheld by Attorney General Stead, who has ruled that the board has no right to go back on the state superintendent's certificate.

The board thus having disposed of the Carnegie Foundation's criticisms, the committee on college reported having made inspections of the four institutions recently pronounced entirely "unacceptable" to the American Medical Association—the Jenner, the Reliance and the Hering medical colleges and the College of Medicine and Surgery. While the committee did not absolutely condemn any of these schools, it reported that improvements were needed in all. The board ordered that another inspection be made shortly after the beginning of the season of 1910-11.

The resolution aimed at the night medical schools, and which is expected to put them out of business, reads as follows:

"WHEREAS, the State Board of Health of the State of Illinois, after a careful and extended observation of the courses of study in the medical schools of Illinois and other states which now give or have given instruction during the evening hours, has determined that proper and sufficient clinical and hospital instruction cannot well be obtained during the evening, or at night, and,

"WHEREAS, the State Board of Health of Illinois is of the firm conviction that it is not practicable for the student who devotes but three or four hours of each day, during the evening, to the study of medicine, to perform properly the clinical and didactic work now commonly embraced in the third and fourth years of the curricula of reputable medical colleges throughout the United States and fit himself to be a qualified practitioner of medicine, competent to treat the sick and suffering; therefore, be it

"Resolved, That the State Board of Health of the State of Illinois, acting under the provisions of an act to regulate the practice of medicine in the State of Illinois, approved April 24, 1899, will determine not in 'good standing' any medical college or institution in which, after June 30, 1911, all or the major portion of the clinical and hospital instruction or didactic work such as is now

commonly embraced in the third and fourth years of the curricula of reputable medical colleges throughout the United States, is offered during the evening hours, or at night time."

The State Board of Health gave much further consideration to the report of the Council on Medical Education of the American Medical Association on the medical colleges of the United States, and directed the secretary to keep the report on file for further reference. The secretary called the special attention of the board to the fact that one of the medical colleges of Chicago severely condemned by Mr. Flexner, one which, according to him, occupies a wretchedly dirty building, has but meager equipment, does not "furnish clinical opportunities in proper abundance" and "prepares candidates for the Illinois State Board examinations in unmistakable contravention of the law"—had been placed in the first class by the Council on Medical Education. This fact, in the opinion of the board, evidenced absolute unreliability of Mr. Flexner's report. It is an open secret that Mr. Flexner made his "inspection" of this college through the aid of the janitor and a few students who were hanging around. Members of the faculty of the college claim that they have never met Mr. Flexner and have no official knowledge of his presence in the institution.

The board also considered with interest a table of State Board examination statistics taken from *The Journal of the American Medical Association*, which, in the opinion of the members of the board, successfully refute the charge so frequently made of late by physicians of Illinois wont to disparage their own state, that Illinois passes more men than other states.

At this meeting the State Board of Health revoked the license of Dr. David Apfelbaum of Chicago for advertising under a fictitious name and for fraudulent use of the United States mails.

While the meeting was in progress Judge Landis of the Federal Court sentenced Dr. Alexander Chittick to serve sixty days in the county jail for fraudulent use of the mails in connection with the sale of diplomas from the "Chicago Medical University" and the "Crescent Medical University."

Dr. Chittick's license was revoked by the board for these offenses May 24.

THE REPORT OF THE CARNEGIE FOUNDATION AS VIEWED BY THE EDITORS OF THE STATE JOURNALS.

Seldom, if ever, has any publication excited the medical world as has the recent report of the Carnegie Foundation on the question of medical education and medical schools in America.

Nearly every medical journal in the country has expressed an opinion upon this report, and we propose in this and succeeding issues to give our readers an abstract of the statements made in journals representing the medical profession in every state in the Union.

We recently sent a letter to every editor of an official state journal, expressing a hope that the report receive consideration in the journal under his control. Up to this time we have received reports from several journals, an abstract of which we present herewith; it gives us great pleasure to state, almost without exception, the report of Mr. Flexner is endorsed.

"The Report of the Carnegie Foundation on Medical Education was made public about the time the A. M. A. Council made its report. The two investigations were made independent of each other, but check up very well together. The Carnegie Foundation differs mainly in severity and frankness, being much more specific and extensive in its criticism

of the sub-standard institutions. Many institutions are pronounced utterly hopeless. Our Texas schools come in for their share of criticism, but fare better than many schools which have heretofore been thought to be their superior. It seems that money and lack of opportunity 'in the present generation,' is our main fault—that we have too many institutions for all to thrive and do the work of first-class educational institutions on the income of their pro rata share of the patronage alone. The report considers it a 'regrettable mischance' that located the Medical Department of the State University away from the main department, urging, among other reasons, that it would be easier to attract and to hold suitable teaching force, and that the stimulus of the whole institution would promote growth of a productive spirit. In this connection, we might parenthetically recall the recent resignation of Professor Austin, of the Chair of Chemistry, and the reasons advanced by him for resigning.

"Whether there be an injustice in these reports or not, they will serve to put our medical colleges on their mettle, and will contribute no little to the tendency of the times to a reduction in the number and an increase in the value of such institutions, either by elimination or consolidation."—*Texas State Journal of Medicine*.

"This Carnegie report is most complete, accurate and just, absolutely without favoritism, and will do more to place medical teaching in America on a sound, scientific basis than all preceding efforts. Its influence is already felt and the report has not been issued one month."—*Committee of Ohio Alumni Association*.

From the forthcoming issue the editor of the *Journal of the Michigan State Medical Society*, says:

"This report we feel is a long step in advance. There is no question that we have too many medical schools, and too few really good ones. Perfect candor must admit that Mr. Flexner in making this study, and from his point of view, has been absolutely impartial. The schools in the United States and Canada which receive his unqualified endorsement could be counted on the fingers of one hand.

"The criticism in some instances is of a minor defect, or a defect due to location, resources or something similar, while the school is honestly trying to do good work—to make the most of its opportunities; but how often is it necessary to accuse the school of fraud?—of advertising more in its catalogue than it gives to its students.

"This report comes to us from the scientist whose ultimate effort is to secure the highest results possible from a teaching standpoint. The most of erudition combined with the cultural broadening obtained in university associations is the end sought. The question of time and expense are of minor import. The ideal condition striven for is a medical school fully equipped and an integral part of a liberal university, having its domicile within the confines of the university plant. More or less of a college education is urged as a preparation for the study of medicine, and in those cases where the university is located in a small town, as in Michigan,

a clinical year in a hospital is proposed to supply the defects due to the necessarily small clinics.

"The truth, the justice, the force of this report is best evidenced by the number of schools which have already announced improvements.

"Even a cursory reading of the report, which gives a panoramic view of all the medical schools in this country and Canada, showing which are weak and wherein they are weak, which are strong and wherein they are strong, what they have and what they lack, wherein they tell the truth and wherein they lie, should stimulate the weak schools to take measures to strengthen themselves or go out of existence, and the stronger schools to improve their equipment and instruction. Some schools, especially the osteopathic schools, are schools in little more than name. There is an abundance of material for future comment."—*Washington Medical Annals*.

REORGANIZATION OF THE FACULTY OF THE UNIVERSITY OF PENNSYLVANIA.

Dr. A. N. Richards, professor of Pharmacology in the Medical School of Northwestern University, Chicago, has been elected to the chair of Pharmacology and Therapeutics, in the Medical Faculty of the University of Pennsylvania, at Philadelphia.

Other elections have been Dr. David L. Edsall to fill the chair of Therapeutics and Practice of Medicine; Dr. Richard M. Pearce to the chair of Pathology. Dr. Pearce will also direct the work of the Department of Research Medicine recently established by an endowment of \$200,000.

Dr. Allen J. Smith will occupy the new chair of Comparative Pathology, and be at the head of the newly instituted course of Tropical Medicine.

Dr. Paul Lewis will be the professor of Pathology and have charge of the Laboratory of the Phipps Institute for the study of Prevention and Treatment of Tuberculosis, now an integral part of the University.

We are glad to note the important development of the methods of medical teaching in the old Pennsylvania School.

THE NATIONAL DEPARTMENT OF HEALTH.

All the people are not fooled by the attempted clouding of the issues on the part of the proprietary interests, the Christian scientists and others and the more sensible portions of the country already appreciate the necessity of devoting as much time and money to the health interests of the people, as is given to the conservation of soil and live stock. The following editorial note from the *Northwestern Christian Advocate*, one of the leading publications of the Methodist Church, indicates that the editor is thinking along right lines:

THE NATIONAL HEALTH.

The Owen bill for a national department of health is meeting with bitter opposition. The chief newspapers of the country are carrying large advertisements headed: "Do you want the doctors' trust to be able to force its opinions on you?" No attempt is made to discuss the provisions of the Owen bill, and just how its proposed requirements for the protection of the public health would force any opinions upon anybody, does not appear. Some things are apparent, however, when inquiry is made into the forces behind these advertisements. It appears that the advisory board of the National League for Medical Freedom, which signs these advertisements, contains the publisher of a magazine which has long been a defender of patent medicine and proprietary interests. It also contains the president of the American druggists' syndicate. With these are associated the president of an anti-vivisection society, some "mental leaders," and a prominent journalistic advocate of "new thought." It thus appears that the private warfare of these latter gentlemen against the American Medical Association is being used by certain interests, who have their own reasons for being willing to spend large sums of money in the attempt to prevent the creation of a national department of health. It is important that the public should not be deceived by this introduction of side issues for the purpose of distracting its attention from the necessity of making immediate provision for the protection and promotion of the national health.

DR. HUBER'S DEATH.

Dr. Jacob Huber, who had practiced medicine and surgery in Pana for 44 years, died in that city June 28, aged 70 years. Dr. Huber was born in Ohio, graduated from the Ohio Medical College, Cincinnati, and immediately enlisted as a surgeon in one of the Ohio regiments, and served through the war, making the march to the sea with General W. T. Sherman. After the war he located in Pana and soon built up a very large and remunerative practice. At the time of his death he possessed an estate of not less than \$200,000 which might have been much increased had the Doctor devoted himself particularly to the business of making money. Possibly no citizen in Christian County possessed more friends than Dr. Huber, and this was well exemplified on the occasion of his funeral, when every business house in Pana was closed.

Dr. Huber was a perfect type of the old time family physician, and the fact that a large number of the rising generation were named after him is the best evidence of the hold he had on the affection of his patrons. Dr. Huber had served as mayor, councilman and member of the board of education; was active in G. A. R. and Odd Fellows circles, and both organizations were remembered in a substantial way prior to his death.

Dr. Huber remained interested in the work of his profession during the entire time of his practice, and was a faithful attendant at the meetings of the District Medical Society of Central Illinois, of which he was one of the founders. His death leaves a large void in the ranks of the Christian County profession.

THE NEXT LEGISLATURE.

In our correspondence columns will be found a communication from Dr. Mammen, president of the McLean County Medical Society and one of the level-headed members of the profession in this state.

We hope our readers will carefully read and seriously consider the statement made by Dr. Mammen, and that each county society will take the matter up at the next legislature meeting, secure pledges from every candidate for the next legislature, that he will help for the interests of legitimate medicine. The time for modesty is past.

DR. STUBBS' COMMUNICATION.

In our correspondence columns will be found a communication from Dr. James E. Stubbs, second vice-president of the society, giving his views on the status of the "Rump Session" of the House of Delegates. We notice this only to state the fact that the best legal authority has given an opinion; that when Dr. Collins announced that the vote on adjournment was in the affirmative the society stood adjourned. It was absolutely unnecessary for him to make any announcement or declaration whatsoever. Of course, Dr. Stubbs is entitled to his opinion, and we are glad to give his communication space in THE JOURNAL.

MEDICAL ASSOCIATIONS PROTECT PUBLIC.

We have received the following letter from one W. H. Watson, who seems to be a composer of religious hymns and a writer on art and music in the magazines. We have had no opportunity of verifying the charges made in this letter and of course insert it without assuming responsibility for the statements made.

CHICAGO, 2011 WABASH AVE.

REASONS WHY THE MEDICAL ASSOCIATIONS DESIRE TO PROTECT THE PUBLIC.

To the Editor:—Having taken the Christian Science lessons, I respectfully inform honorable members of that cult, who are ignorant of facts, by quoting two of the many deplorable results of malpractice:

I visited a lady in Chicago who had been treated by Mrs. Eckel, a Christian Science healer, who demanded \$100 in advance. Failing to heal, she advised the patient to enter a medical hospital.

Another Science healer, Miss Mandeville, tried to heal a case of diphtheria by telephone at Davenport. The coroner's jury's verdict was manslaughter, but the grand jury said that the afflicted patient's death was caused by religious fanaticism and dropped the case. This lady is still trying to heal in Chicago.

The medical authorities should suggest to Christian Science healers the advisability of expelling from their ranks these people whose cupidity is so proverbially known.

WILLIAM H. WATSON.

Correspondence

PREPARE FOR THE CONTEST.

BLOOMINGTON, ILL., June 21, 1910.

To the Editor:—In view of the raising of money to be used for legislative purposes by the osteopaths, and in view of other indications from sectarian bodies of their intention to endeavor to break into the medical profession by cheap and short cut routes, it would be well, it seems to me, that the profession of our state place themselves squarely and unanimously upon a single platform.

At the last session of the legislature, the argument which was most effective in convincing legislators of our sincerity, was the argument that there should be but one door of admission to the practice of medicine in the state. The average legislator and his average constituent, can understand us if we demand higher qualifications of the medical man, and one square deal for all.

The profession that takes responsibility of health, life, and the physical welfare of the community, cannot be too well fitted for its duties. It is therefore for the highest and best interest of the people of this great state, that only the best fitted men shall enter the ranks of the medical profession.

There is no side door for entrance into the legal profession, nor any special laws enacted for cults and isms in the teaching profession, why should there be such in the medical profession? The people of the state are face to face with the problem whether or not there shall be multiple boards, to the number of which there is no limit, for the legalizing of inferior and partial methods of practice. The medical profession is broad enough, big enough, and the opportunities for practice in it multiple enough, to be all-inclusive. Let us, therefore, as a profession, go before the people and before the legislature if need be, and ask for legislation which shall be primarily and supremely in the interest of the people of the state, and never in the interest of any special cult or school of practice.

Let us have one board which exercises supervision over all medical matters in the state, including the examination of candidates for practice. Let us demand that such examinations be reasonable, practical, and thorough for all alike, whether he belong to the regular profession or tack on to his name some "path" or "fad" or "cult" or "ism." Then having passed such examination let him be free to become osteopath, homeopath, menteopath, or walk in whatever "path" his inclinations may lead him.

The medical profession of our state, as a part of the people of the state, cannot afford to see men of partial or inferior qualifications admitted to practice. In our future demands for legislation, let us not ask for changes from the present law which might lead to confusion or to the enactment of retrogressive legislation, but let us seek to get efficient and

thorough administration of what we have, and unite in the demand for one board of health, and one door of admission to the profession. It seems to me that we should thoroughly understand the ability of the board of health to cope with the present situation as well as its limitations under the law.

Our State Society and the Board of Health should cooperate in the interest of the people of this great state. Our profession, the Board of Health, the legislature, and the people, should cooperate in purifying the profession of incompetents and undesirables. It would seem to me that we should have no difficulty in convincing legislators of our sincerity, and the reasonableness of our demands.

I would suggest therefore the following platform:

1. One door into the medical profession
2. One reasonable standard of requirements on examination for admission.
3. One set of laws for all.
4. One competent board to administer the law.

Such a platform ought to win for advanced standards of efficiency.

Very truly, yours,

E. MAMMEN.

310 Griesheim Building.

DR. STUBBS' VERSION.

CHICAGO, July 2, 1910.

To the Editor:—"He who fights and runs away may live to fight another day."

As you have given one version of the last State Medical Society meet in the ILLINOIS MEDICAL JOURNAL, please give the same publicity to my report. It is my right and I demand it, as you have, in your judgment, cast aspersions on the winding up of the business of the house of delegates. I was there and know whereof I speak.

First, There was no "Rump Session," no "called session," but a continued session from its opening to its adjournment under the gavel held in my hand.

Second, "Insurgents!" the word sounds good in the ears of every true American, and he who loves liberty above oligarchy or plutocracy. Without insurgents where would this nation be to-day?

"The insurgents" rode about the town and cried, "Liberty, liberty," and called upon the people to join them. J. Adam works, 1-103.

The insurgents of the Chicago Medical Society and the State Medical Society have cried liberty, liberty, and called on the rank and file of the profession to follow; and they are following, as witness the results of the last election in the Chicago Medical Society, and the State Medical Society are coming sure.

Because the workers for progress, and changes in the politics of the Society, the opposition call us insurgents. Well, the name is honorable. By the same rights that you call us insurgents we could call you "moss-backs, long ears, plutocrats," etc., etc. But no, we do not, simply call you

brother physicians who do not look from the same exalted vantage point that we do and see the trend of coming events as they are marching forward.

We are for progress in higher medical education and for untrammelled medical politics.

Allow me to make some corrections to your last paragraph on page 154 of the June JOURNAL. "As soon as Dr. Lydston's resolutions were presented to the House of Delegates a motion was made to lay them on the table. Some one who saw how things were tending moved to adjourn. The motion was put. From the vote cast, *viva voce*, it seemed the noes had it. Dr. Collins, the vice-president, who was in the chair, said the ayes had carried. Immediately a score of voices called for a roll-call, which was their right to do. During the demand for a roll-call, the vice-president vacated the chair and with many of the hungry delegates (it was after 1 p. m.) made a wild rush for the door, the political leaders in the van. Some of the leaders remained in the vestibule of the hall and peaked and pricked up their ears to hear and see about what was doing. But a very disagreeable feeling in the epigastric region of their corpus overcame their curiosity and they too "ducked" for refreshments. The vice-president, Dr. Collins, never officially declared the House adjourned, so say twenty other delegates; so says the official stenographer. At the call of a number of delegates I immediately took the gavel and declared the House of Delegates still in session. In order to establish the fact that there was a quorum present the secretary, Dr. Weiss, counted those present (at whose request I know not). He stated (and I have the evidence that he made the following statement) there were 19 present; while that was doubted and a great "talkfest" was going on I did some counting and I made out 23 delegates in the room. While the talkfest was proceeding Dr. Moyer came in, making, according to the secretary's statement, 20. Being the official officer (second vice-president) *de facto* president, I declared a quorum and asked the House to proceed with business.

The motion to adopt Dr. Lydston's resolutions was put and carried unanimously. During this time several other delegates came in to the hall.

Dr. Moyer's report was read and adopted, and an auditing committee appointed. Also a vote of thanks to the city for courtesies, etc., passed, and we adjourned to meet May, 1911, in the city of Aurora.

You also stated "a minority, said to be 18 in number, placed Second Vice-President Stubbs in the chair and we understand pretended to take on the functions of the delegates of the State Society." Let me correct: I did not pretend, but actually, legally did take on the functions of the State Society. There was no "Rump Session," no called session, but a continuation of the regular session, without a recess or any stopping of the machinery. Let me say the leaders showed the white feather, turned tail and ran; were afraid to meet the issue squarely.

By the termination of the last session of the State Medical Society learn a lesson; do not leave any body in session until it has been officially announced as adjourned by the presiding officer.

Now, my dear brother Editor, in the language of the great B. B. Spalding, "you are off of your base." The fans have rattled you.

I think the above corrections are due to the profession.

Yours fraternally,

JAMES E. STUBBS, M.D.,

Second Vice-President, S. M. S. of Illinois.

DR. CRUTCHER COMMENDS THE JOURNAL.

ROSWELL, NEW MEXICO, July 19, 1910.

DR. GEORGE N. KREIDER, Springfield, Ill.

Dear Dr. Kreider:—Without meaning to be invidious, I believe the current issue of the JOURNAL to be the best for many a long day. It is full of meat, from cover to cover. I am glad that you were courageous enough to reprint that juicy report from Flexner, and also to give "Old Hahnemann" a well merited shot. If you can find space for it, I wish you might reprint what Flexner has to say concerning "Medical Sects," which is full of good food for thought.

HOWARD CRUTCHER.

COUNTY AND DISTRICT SOCIETIES.

ALEXANDER COUNTY.

The Alexander County Medical Society held its regular monthly meeting at the Commercial Club rooms in Cairo, July 21, 1910. Dr. S. B. Cary, the president, presided, and there were a goodly number of physicians of the county present. Dr. W. F. Grinstead, of Cairo, read the paper of the evening on the subject: "A Rare Danger Lurking In a Broad Ligament Cyst." The essayist revised briefly the anatomy of the broad ligament and the origin of cyst of that region, then took up the report of a case that he had recently operated upon. The tumor was a sessile one. The unusual complication was a cord running across the anterior surface of the growth which was at first thought to be a cicatricial band, a closer inspection, however, revealed the fact that it was ureter of that side. The dissecting out of the cyst was a difficult task, made especially so because of the fact that careful inspection revealed no place where two membranous surfaces united offering a point of attack. The complete removal, however, was accomplished by draining and packing tightly and the dissecting very carefully. No drainage tube was placed, the operation wound being closed completely. The patient made a complete recovery with no evidence of return. Dr. W. C. Clark, of Cairo, opened the discussion, dwelling at length upon the origin of such tumors. The majority of such tumors have their origin in a degenerated ovary. He thought a good idea of the character of the cyst of the pelvic region could be obtained by an examination of their fluid contents. He held that, in view of the great difficulties in the way of dissecting out such tumors, the best procedure as a general rule was to incise such growths and stitch their walls to the abdominal walls and drain in that way. In view of the serious results that would follow from the mistake that might easily have been made in the case presented one should be always on the lookout for the ureter in operating on tumors of the pelvic region. The discussion of cysts was further continued by Drs. W. H. Fields, Jas. M. McMannus, Samuel Dodds, J. B. Hibbits, E. S. Diekson, after which the society adjourned.

JAS. M. DUNN, Secretary.

COOK COUNTY.

CHICAGO OPHTHALMOLOGICAL SOCIETY.

Meeting of May 16, 1910.

The President, DR. W. A. FISHER, in the Chair.

MAGNET OPERATION AND SKIAGRAMS.

Dr. E. F. Snyder read a paper on this subject and exhibited some illustrative pictures.

Dr. L. R. Ryan, of Galesburg, recently had had two cases where he felt positive there was a foreign body in the eye, but was unable to locate it. He had no means of making a skiagraph, but used the magnet without success. A physician in a large city made a skiagram, found and removed the foreign body. In the second case there was so much hemorrhage that it was impossible to locate the body. He followed the expectant plan of treatment for three or four weeks, and after the hemorrhage had been absorbed a piece of steel was located and removed. In this case the giant-magnet did not work right. It was tested before the operation and seemed to be all right, but during the operation it failed. He found subsequently that one of the connecting wires had burned out. The foreign body was located in the retina above the iris, and it was drawn down to the lower and outer quadrant, where an incision was made and the foreign body extracted.

Dr. C. H. Beard thought that one point was exceptionally well taken, and that was that we are too apt to despair of saving some of these eyes. A man was punching boiler plate with a punch of a diameter of five-eighths of an inch. It was poorly set in the machine and nearly half of the face of the punch broke off, penetrated the upper lid, entered the globe, tearing its way in and making an enormous opening. The steel was removed with the giant-magnet nearly a year ago. The man has a satisfactory eyeball of normal tension, but has no vision. The eye is quiet, however, and the globe is of good shape and form.

Dr. Henry Gradle felt that the conclusions of Dr. Snyderacker would be concurred in by all surgeons of experience. He had had a few experiences which do not come within the range of the paper, however, but were interesting in this connection. One of the cases illustrates the possibility of a small piece of iron remaining in the eye and ultimately disappearing by complete absorption, without causing siderosis. Toward the end of the seventies a man received a small chip in the eye, which entered the lens. The patient was seen a few days afterward, and there was no reaction, and as knowledge of the magnet extraction was limited, Dr. Gradle concluded to do nothing. The object was absorbed. The eye was quiet many years. Fifteen years later the man had sudden occlusion of the macular arteries of the other eye, making him totally blind for a time. There was a large central scotoma and a cataract was present in the injured eye. A dissection of the secondary cataract was made and almost normal vision obtained for the primarily injured eye. No siderosis was demonstrated, nor could any foreign body be located with the ophthalmoscope. The small piece of iron in the lens had become completely absorbed. Recently another instance was met with where a small piece of iron remained in the eye about twenty years and escaped detection. It became absorbed, but caused considerable damage, perhaps directly, perhaps indirectly. The man complained of rather poor sight and some discomfort. On examination there was the appearance of a simple glaucoma, not very well pronounced. Excavation was not complete. The hardness was doubtful to the finger, but the pupil did not react. The iris appeared somewhat atrophic. The entrance wound of a small piece of iron could be demonstrated in the cornea and a corresponding rent in the iris near the periphery was seen. On looking obliquely into the eye under mydriasis a small piece of iron surrounded by a cloud-like mass in the choroid could be observed. There was no siderosis. Vision was probably reduced, and the field of vision was more characteristic of simple glaucoma than of siderosis. The skiagraph showed nothing. The piece of iron or steel has been absorbed and the man is suffering from simple glaucoma following the lodgment of a foreign body in the choroid about twenty years ago.

Another patient was one whom Dr. Wood saw. It was a case in which Dr. Gradle was associated with Dr. Pinckard. A young man had his glasses broken and it was assumed that a large piece of the glass got into the eye. After a day or two of irritation the eye became perfectly quiet. Dr. Pinckard saw him two weeks before and the eye was free from irritation, the pupil freely dilatable under atropin. Vision was far from normal. In the eye there were recurrent retinal hemorrhages every day or two. The vitreous was clear, but there was something that looked suspicious of a foreign body. The skiagraph showed a very sharp outline of a somewhat comma-shaped object, not over one-quarter inch in height and 1 or 2 millimeters in width.

After a few days we came to the conclusion that if a foreign body could not be excluded, the eye was too dangerous to remain, although it was free from inflammation. We opened the eye, went in with forceps, but did not succeed in removing anything. The eye was then enucleated, and on opening it we found that about one-third of an ordinary spectacle glass was standing vertically in the vitreous in such a manner that the x-ray had taken a profile view, showing it as a comma-shaped object. The glass was fully more than one-half inch in length.

Dr. Snyderacker, in closing, said that he had examined many pieces of steel under very high magnifying glasses. Removing a piece of steel is not a simple piece of work, because the steel is covered with little barbs. Sometimes it is studded with fish-hook-like projections, which attach themselves to the surround-

ing tissues when removing the object. He had read of many descriptions of drawing the foreign body forward through the small incision, but he has never been able to do that, especially when the steel had become encapsulated. Dr. Snydaeker thought it was better not to withdraw the foreign body through the original opening. It depends entirely on the location of the body and the possibility of injuring the lens and cilia during the withdrawal. It is better to draw the body into position, where an incision can be made safely, and the object withdrawn. A skiagraph should be taken in every case regardless of the fact that the object has been located with the ophthalmoscope.

REPORTS AS TO THE CONDITION OF THE CATARACT CASES OPERATED ON BY DR. GREENE.

Dr. William A. Fisher reported that his case had done nicely in every way and that patient's vision was 20/20 with a plus 10 D.

Dr. John R. Hoffman also reported on a case that Dr. Greene has operated on.

Dr. Willis O. Nance reported that in his case there had been considerable reaction following the operation and the healing of the corneal wound was slow. The eye is still red, although there is no indication, nor has there been, of iritis. The pupil is large and elliptical in form. There is a distinct membrane, probably remains of the zonule covering fully two-thirds of the pupillary space, and corneal-striae are visible. Vision is 20/120, and there is no improvement with glasses.

Dr. Nance had the eye dressed at the end of the forty-eight hours following the operation, believing that it is positively unsafe to leave an eye operated on for cataract unnoticed for six or seven days as advised by some operators.

Dr. Clark W. Hawley reported on two cases, in which, except for some complications incident to meddlesomeness on the part of the patient, the progress had been very satisfactory. In one case, that of an old lady, vision is about 20/40. With a plus 4 or 5 she reads newspaper print. The interior of the eye is clear. The second patient, a man, has 6/36 vision, and his eye is clear.

Dr. H. W. Woodruff reported that his patient had had an injury, a piece of wood striking the eye eight years ago. The pupil was eccentric, and could not be dilated. The other eye was myopic and the seat of the diffuse chorioiditis. At the time of operation a slight amount of vitreous was lost. The eye was tested rather frequently and the wound healed slowly. The anterior chamber did not reform for some time. The wound lips did not approximate well, so that at the present time there is a high degree of astigmatism. There is 20/30 vision with a plus 6, combined with a plus 6 cylinder.

Dr. W. H. Wilder reported that his patient had passed through the operation satisfactorily, the wound healed well, and there is 20/50 vision, but a high degree of astigmatism, 8 D., with axis 45. There was a great deal of redness for a considerable time after the operation. There is not, he said, the tendency to iritis or iridocyclitis in the Smith operation that there is in the ordinary operation, and therefore he did not understand the condition present in his case.

Dr. Oscar Dodd said that his patient was 81 years old and not in good health. The operation was successful; the bandage was changed on the ninth day and the eye was then in good condition. The wound had apparently healed. Forty-eight hours later the eye was irritated and the wound was leaking. The eye quieted down for a few days. The only complications that occurred were that the lips of the angle of the iris became adherent to the wound, pulling it up and making the pupil elliptical. There was a large amount of astigmatism, from 12 to 15 D. Vision was 20/200, with an 8 D. cylinder, but at the present time it is 20/100, with a plus 5 combined with a plus 10. The media is perfectly clear.

Dr. E. V. L. Brown stated that he had seen about sixty patients in Dayton on whom Dr. Greene had operated, but that in his opinion the results were not as good as those obtained with the ordinary cataract operation.

Dr. D. W. Greene said that these cases are absolutely different from those of the old operation in everything. Some of the things reported to-night as adverse criticism will eventually turn out all right. He had had about 600 of these cases

now, and many of the conditions referred to to-night have happened, but they have all turned out better than one would expect. He has not had these things happen in any considerable degree, and that is probably because of the fact that an operator is handicapped seriously when he operates away from his own operating-rooms.

In regard to Dr. Nance's case, Dr. Greene had seen the condition he described. The lens came out perfectly in the capsule; the membrane in the pupil can only be some remnant of the suspensory ligament. Dr. Greene's judgment is that the weakest thing about the whole Smith operation is the large section that is necessary to get the lens out. All the trouble encountered relates to the section of the Smith cataract operation, and the section will determine the amount of astigmatism. If one succeeds in getting a straight section, a high degree of astigmatism will not result. If primary union is secured a low degree of astigmatism will follow, but if delayed healing supervenes astigmatism is high, but it gradually becomes less, as is shown in Dr. Dodd's case, where it was reduced from 12 to 15 to 5 D. Myopes are bad subjects, as a rule, because of the low tension of the eye.

If normal tension is present there will be no trouble. If the tension is low, trouble will result. The section made suits the operation, which is an upsetting of the lens. If a circular marginal section is made to upset by pressure below, the upper quadrant of the lens will be constantly in front of the section. Major Smith makes a corneal section and gets more astigmatism than when the peripheral section is made. But the corneal section has many advantages. There is no cystoid healing.

You must remember that middlesome treatment of cataract wounds is bad practice. Dr. Greene had the misfortune of seeing a total suppuration of the globe, but what good would it have done to have seen that infection on the second day, because the globe is hopelessly lost, no matter when the suppuration is discovered. In Dr. Dodd's case the wound was leaking; the section involved the upper third of the cornea. The 3-millimeter section will heal much quicker and better than the large section made in extractions within the capsule. The size of the section is the weakest point of the operation. The lens cannot be extracted without rupture of the capsule unless a large section is made. If the capsule is ruptured the ordinary capsulotomy operation has been done. Dr. Greene has not seen many cases in which there were iris entanglement. Dr. Brown, Dr. de Schweinitz and Dr. Standish saw about sixty of his cases, and there were only two cases of iris entanglement among the number. That is as good as can be done with the old operation. The pupil is drawn up in many of these cases; in fact, a high pupil is the rule. The doctor suggested to Major Smith that he make the iridectomy from below instead of from the side, as he was in the habit of doing. He has now adopted this plan.

Dr. Greene has seen the black spots mentioned. That is nothing but pigment from the posterior surface of the iris. The reaction in these cases is more severe than in the ordinary operation, but if they are watched it will be seen that while there is redness there is no pain. The redness is more of an irritation than an inflammation. It is a trauma and not an infection, which is really to be expected in this operation.

One advantage of the operation is the fact that an immature cataract can be removed easily and quickly. In removing the lens the pressure on the cornea must be at a point opposite the lower border of the lens. This tears the suspensory ligament and the intraocular pressure forces the lower edge of the lens upward and forward toward the corneal incision. It pops out and is held only by the zonule. The lens comes away clean without any shreds hanging to it. There is no escape of vitreous, because as soon as the lens pops out the lips of the corneal wound meet. It is important to keep the hook away from the capsule or it will rupture.

Dr. Faith asked if in the combined extraction it is not uncommon for two raw surfaces to adhere and to have entanglements of the iris to the posterior surface of the cornea. Dr. Ware used to do a preliminary iridectomy on all cataract

cases and there was never any entanglement of the iris. The iris healed quickly and there were not two raw surfaces to come together, as in the combined extraction.

Dr. Snyder said that it seemed to him that in the cases reported to-night the average visual acuity was not very great. Is that usual in these cases?

Dr. Greene said he believed in preliminary iridectomy. If this was done in every case we would have greater success. Of course, the eyeball is opened twice and few patients will consent to two operations, which is the point to be considered.

As to the visual acuity, the results reported to-night are by no means typical. Last year Dr. Green reported seventy-five cases at the American Medical Association, and in most of the cases Drs. Wood and Jackson found better vision than was reported. These cases are being judged at the end of thirty days. Practically all the conditions seen immediately after the operation disappear within a very short time. By delivering the lens by the Smith operation there is in certain cases an attachment between the posterior capsule and the anterior layers of the hyaloid. Where you do not open the capsule you do not have the iritis that you have when you open the capsule.

WILLIS O. NANCE, Secretary.

CHICAGO MEDICAL SOCIETY.

THE PHYSICIAN A MORAL EDUCATOR.*

G. H. VAN DYKE, M.D., CHICAGO

The Hippocratic oath has long since ceased, and with it the physician's prestige as a man of social influence. In earlier times, the man of science was also a man of culture, but to-day, in the division of labor, the scientific man is one thing and morals are relegated to another specialist, the clergyman.

That the physician is, and by rights should be, a scientific teacher and is best fitted to dispense a certain line of scientific thought, is admitted by all. He is looked to as the guardian of physical good, the corrector of hygienic error and the preserver of the public weal. Nor are those who so look upon the physician often disappointed. Indeed, that the physician has done much more for the common good of man than has any other class of specialists is not to be denied. Why, then, is the physician not held in respect, equal, at least, to those whose lines of activity also come within the same sphere, but who are acknowledged by common consent to have done and to be doing less than he? Is there not some reason, lying perhaps close to our own door, for this highly undesirable and unnecessary condition?

To individual and public alike the physician is usually ready to advise against things of a physical or tangible nature, of a pernicious influence. Why should he fold his hands when moral, immoral or even religious questions and conditions are brought to his notice in a given case, that are assuredly the cause of disease, even indirectly, and content himself with the thought that the other specialist should get busy, too?

No one knows so well as the physician the real cause, other than germs, of many of the physical ailments. Then why not "magnify the office?" Why should the physician not do his *full* duty toward those who consult him? To the patient whose mental or physical habit is the real cause of the disease, can the physician feel that he has done his full duty when he has provided him with an intelligent prescription, but has not spoken in clear tones against the cause of his ailment? He would do so if it pertained to some contagion; why not equally when some habit of lust? Why not speak against any form of evil which brings a patient to the office seeking relief? Perhaps the physician's own moral sense is not as keen as it should be.

The one great reason why the physician's prestige is such a beggarly quantity is the fact that his own life is not the pure, clean life that is expected by the

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public, and which the public has a right to expect from the men who know things. "Thou that sayest do not steal, dost thou steal? Thou that sayest do not commit adultery, dost thou commit sacrilege?" Is it not a fact that the physician has lowered himself by indulging in the commonplace habits, from mere commonplace sins to the grossest crimes of the whole catalogue? He, with the brute, has run the gauntlet. Every crime that the low, dumb, brutish crook has committed has been indulged in by men of the medical profession. If proof of this statement is desired, I cite you to the criminal records of the state, any state in which you may happen to live. You will see that the physician is by no means free from criminal conduct. In questions where his profession touches the social and moral status of the community, notice the apathy and utter disregard and lack of interest; also the disregard and dogged indifference in vital statistical reports.

Is the public unfair in not dividing with us a larger share of honor and trust? Is it not giving us our full due? Why should it be otherwise than fair? Is it in the face of the fact that we, as a class of public specialists have made ourselves worthy of unqualified professional confidence that the public has arbitrarily withheld it from us? When we do as the charlatan does we must expect the charlatan's reward. When we belittle ourselves by defaming each other before the laity, we can neither ask nor expect its unreserved confidence. We must expect the absolutely inevitable: to "reap what we sow." When we do not and cannot look our young men and young women patients in the face and, with a tone that tells, admonish them against a habit or life of sin which brings the diseases upon them for which they seek our office and counsel, but find ourselves befouled by the same vice, habit or crime, are we any better than they? Simply because we have a smattering of scientific training is not sufficient in the mind of the public to cause it to admire the medical profession as such. Our lives are measured by the same great measuring rule that is universally applied, "by their fruits ye shall know them." After all, it is what is in the *life*, rather than in the head that counts.

The remedy is clear and certain: a life irreproachable and well abreast of the best lives in the community, a character strong enough to resist the temptations to sin, which are placed in the way by weaker and less responsible lives. Undaunted and yet unobtrusive rightness is the remedy. Could not something be done to infuse such an ambition into the hearts of the young men and women who are seeking the profession, that would, at least, partially correct the only too evident state of morals, or lack of morals, among physicians? Or shall we close our eyes against this condition and look only for germs? If so, what is the justification of such a course?

There are two places, it seems to me, where good and effective work could be done, which would have a wholesome influence: 1. The necessity of the physician's living a dignified and responsible life should be taught with effect under the head of ethics in, at least, the senior year of every college course. This subject should receive the same conscientious attention as that of any other subject of the course. 2. State boards should exercise their powers more freely by revoking the licenses of those who deliberately and repeatedly lower the profession by living immoral lives or committing acts of crime.

With no desire to appear either a pessimist or a calamity howler, it seems to me imperative that some recognition be given to the fact that reform measures are indispensable to the best interests of our profession. It is very commendable that leaders of education among us are insisting upon better preparation for entering the medical college and a higher grade of medical education on leaving it; but unless the moral standard is raised also, professional retrogression will inevitably continue. *The insatiable thirst for gain and an increasing tendency to avoid responsibility are two dominant mental states to be deprecated.*

"Ill fares the land,
To hastening ills a prey,
Where wealth accumulates
And men decay."

Let rascality, inebriety, law-violation and open and flagrant quackery be sifted out. So long as the practitioner, apparently in good standing, continues to deceive his patients purposely and ingeniously, so long will the public look with a certain amount of distrust upon the profession. The patient justly looks for as much integrity in the man who holds his life and health in his hands as in his banker; perhaps more. And just in proportion as it is found wanting in that proportion will some other cult gain ascendancy. No better reason than this can be found for the existence of the numberless religious cults.

Let the ethics of the profession be given their deserved place in the interests of the student and let their violation on the part of the practitioner be punished by excommunication, and our profession will be raised to a dignity and influence that will be both ennobling and gratifying.

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STAMMERING AND ITS TREATMENT.*

G. HUDSON MAKUEN, PHILADELPHIA.

(Abstract.)

Dr. G. Hudson Makuen in the above paper spoke of the importance of oral expression as a factor in mental and physical development, and the unfortunate consequences which must attend those who are not in possession of the free use of the faculty of speech. Of all the ills to which humanity is heir, there is probably none of like character that entails so much anguish of spirit and tends so much to warp the personality as stammering, and yet scientific men everywhere, educators and physicians alike, are inclined to regard the affection with comparative indifference if not with actual levity. "Come," says Tupper, "and I will show you an affliction unnumbered among the world's sorrows," and yet we as physicians and teachers are inclined to make light of the affliction and even to laugh at the awkward plight of stammerers.

Our standards of normal speech are too low. If they were as high as they should be, more children would be given special speech training. Stammering is largely a product of our modern civilization. It is a social evil. It is one of the results of an unfortunate heritage, fostered by an inadequate and one-sided education. Artistic physical training with us has been much neglected, and we would do well to study the methods of the ancient Greeks and of the Latins or of the more modern Japanese, who are masters of the fine art of physical development.

The phenomena of stammering are characterized chiefly by spasmodic contractions of the speech muscles, and the resultant unnecessary and oftentimes ludicrous movements of other related organs, and they are due to excessive, misdirected and uncontrolled nerve energy which having aroused the speech organs to the limit of their excitability, often overflows into neighboring channels and causes movements of the head, arms and legs and sometimes affects the heart, stomach and other internal organs.

Speech has been defined as articulated voice, and voice as the material of which speech is made. Voice is defined as being a moving column of breath set in vibration by its own impact with the vocal bands and reinforced by its diffusion through the various resonance chambers into the surrounding atmosphere. There are two essentials, therefore, to voice production. First, the moving column of breath, and second, its conversion into sound waves, the results of which we call voice. Speech is the moulding or the articulation of voice into characters or symbols which by common consent are recognized as being representatives of thoughts and ideas.

The production of voice precedes the development of the faculty of speech. Speech development and mental development take place simultaneously, the one stimulating the other. When the mental faculties begin to operate the desire

* Read by invitation before the Chicago Medical Society, April 6, 1910.

for expression arises, and it is in this desire for expression that the necessary innervations have their origin.

Normal speech is largely automatic and independent of any conscious effort. When a defect of speech arises, therefore, the patient is wholly unable to correct it without some outside assistance.

The primary and principal speech centers are the auditory and the glosso-kinesthetic centers, the visual and chiro-kinesthetic centers being employed chiefly in writing. In the auditory center are stored the images of words as they are heard, and in the glosso-kinesthetic center are stored the memories of the various complicated muscle movements and coordinations of the peripheral mechanisms employed in the processes of speech.

When a person speaks spontaneously the cerebral processes are somewhat as follows: (1) Ideas are aroused; (2) from the mental operations conducted with the help of these ideas a resultant product issues; (3) the product is clothed in words; (4) the central innervations necessary for their externalization are brought about; and finally (5) these innervations are conducted to the peripheral organs of speech in their proper order and intensity.

In the acute stage of stammering, the child experiences his difficulties chiefly in the nervous mechanism through which the innervations are carried to the peripheral organs. The disability in this mechanism may be congenital or it may be acquired. As the stammering progresses, the innervations themselves become disturbed, the clothing of the product in words is also interrupted, and there follows a confusion of the ideas which form the basis of the mental product. There is a continuous contest going on between the will or desire to speak and fear as to the results. The contest is oftentimes an unequal one because the fear is so great as to lead to a veritable nerve panic which completely paralyzes all concentrated effort.

The causes of stammering are two-fold, predisposing and exciting. The predisposing or ultimate cause of stammering is inherited and congenital. It consists of an irritable or hyperesthetic condition of the psycho-motor mechanism, and the child possessing it may be said to have a predisposition or tendency to stammer. This condition manifests itself at the very beginning of the developmental speech period in the second year, and it is characterized by the various forms of speech difficulties, such as tardy development and a general inaptitude toward vocal and articulatory efforts. This is what I have called the first or prodromal stage of stammering.

The exciting or immediate cause of stammering may be any one or more of many different things which are usually accidental and environmental. The various nervous diseases of childhood have been known to result in stammering in those who are predisposed to the affection, and nervous shocks resulting from accidents and injuries are frequently the forerunner of stammering. One of the most fruitful exciting causes of the affection, however, is a lack of the right kind of speech training during early childhood. The popular belief that the development of speech will take care of itself and the plentiful lack of knowledge on the part of the parent and teacher as to the amount and kind of assistance that many children require; the tendency for instance to ignore their errors of speech or even to laugh at them and to encourage "baby talk" because it happens to appear to them, forsooth, to be "cute," are all detrimental to the future speech of the child and they frequently result in stammering and other forms of faulty speech habits.

The ultimate cause of stammering, therefore, is more physical, while the proximate cause is more mental. The former consists in a weakness or a functional disability of the efferent nerves of speech and the latter in faulty innervations arising from resultant disordered intellectual and emotional states of mind.

The treatment of stammering should be divested of all mystery and secrecy, and it should be simple, direct and physiologic. It should aim to supplant faulty habits of speech with correct ones, and it should begin with the removal of all obstacles to normal speech whether they be found in the peripheral or

central mechanisms. Bad moral, mental and physical habits should be replaced by good ones. There should be instituted a systematic course of ethical, mental and physical culture, which shall have for its object the general development of the individual patient. An ear for good speech must be cultivated just as the practical musician must cultivate an ear for music. The child is always blissfully unconscious of his stammering until his attention is called to it by his parents or teacher.

In considering the treatment of stammering, three stages of the affection should be recognized, namely, the prodromal, the acute and the chronic. In the first and second stages the treatment is largely preventative but in the third stage, after the habit has been once formed, it consists in a complete reorganization of the speech habits.

Those in the first stage and sometimes also those in the second may be successfully treated by intelligent teachers in the schools, but the real stammerers of the third stage require expert treatment of the highest order, and I know of no disease which so taxes the skill and ingenuity of the physician as does the combination of nervous derangements which accompany stammering.

Mental culture, voice culture and speech culture must form the basis of every rational method of treatment. The stammerer must acquire a high degree of vocal power and the greatest possible articulatory skill and efficiency if he would overcome his difficulties. He must learn to play upon his own vocal organs somewhat as the pianist learns to play upon the piano, and he must learn to be his own teacher. He must bring all the processes of speech within the domain of his own consciousness, and he must control them entirely by volitional effort. He must know that he can control his speech and he must know that he knows that he can do it.

The four important things for him to be trained in are respiration, phonation, articulation and mentalization, and the object of the training should not be primarily to cure stammering but rather to develop a good voice, facility of articulation and the right mental attitude. This kind of training necessarily presupposes extraordinary tact and skill on the part of the teacher and physician, and persistent cooperation on the part of the patient.

WHY DOES THE GENERAL PRACTITIONER NOT ATTEND THE MEETINGS? *

JOHN J. STOLL, M.D.
CHICAGO, ILL.

When this West Side Branch was started, it was proclaimed as the Practitioners' Club. Here in this environment of colleges and hospitals and the greatest possible field for general practice, there should be gathered the greatest attendance of medical men, that it would be possible to gather anywhere. The original object was to bring all of these elements together in Cook County Hospital, as one harmonious gathering. The usual factional feeling soon arose and many of my fellow-practitioners have openly remarked that I might as well quit now as later on, because the general practitioner was not wanted here for any other purpose than to listen to the tutors, college men and ex-interns. There is no use to get on the outside and kick. The only way to fight is to stay right here and have it out. I have stood by the society through thick and thin from the beginning, and why I should be the first one to be turned down and snubbed by the program committee is only the irony of fate. My place on the program dates from the last meeting last year, and there never has been another case where the member was not extended the courtesy of reading his paper at the next meeting. I am here to-night only because of kicking and howling every month for my rights and have not begun to fight, yet say nothing about giving up to any crowd of silk stockings. There used to be a regular attendance of general practitioners here and they fixed the date of meeting on Thursday nights. Last

* Read before West Side Branch of Chicago Medical Society, June 13, 1910.

fall the day was changed to Monday because a card game on Thursday night outweighed any consideration for the general practitioner. We know we are not wanted here for anything else but to listen, to admire and to be a lamb. The mode of bringing men together, the mode of governing them and the mode of controlling them is a farce. The main reason why there is not more attraction here for the average man is because there is nothing to show that the conditions for general practice will ever be any better. There is no advantage of any kind whatever for a general practitioner to come here or belong here, for one class is doing all the ruling and reaping all the benefits. By that I do not mean to excuse any one for keeping away. There should and must be a way of controlling men locally and not by state law. As it is now, a man is just as independent, just as free and just as well protected outside of the fold as inside. The fact is that, as an organization, we amount to nothing. The advertised idea, that membership is of any help or is the slightest barrier against the malpractice fiend, has been found to be a frost. The fact that such a thing as an insurance against malpractice can exist and be paid for out of one's hard earnings is a terrible black mark against us as an organization and a still worse mark for an allied profession. Periodically or spasmodically a sort of reform wave alights in our midst and long-forgotten things are relished for a while to hide something more important. When the powers that be are through shaking the old red rag of dispensary evil and contract practice in our faces, they have usually helped themselves to something else desirable to themselves. Any person who has no more self-respect than to mingle with what rightly belongs to a dispensary is welcome to their choice. They are not desirable clientage. Contract practice is only an evil when some minor light takes a fat railroad or factory job away from someone else. Of all the mass of fine papers and interesting cases presented here, very few attracted the general practitioner, because they are cases he rarely encounters. It is just like reading a certain high class journal, which has about one article in five (5) years of any value to a man in general practice. If you will admit that you are trying to eliminate us entirely and force everybody to go to a hospital, then you can start a new issue. Instead of the usual routine, "The patient was removed to the hospital and operated," you must get used to saying, "Professor Knowitall was called in and took charge of the case." You want us to come here and listen and to look at you operate. If one of us attempted any of these operations you would condemn us. That is why your presentations are a farce. The man alone, the man removed from our environment, the man dependent upon his own thinkcap has no hospital accommodation, no trained assistants and no trained nurses to arrange and help at every turn. He must even make his own diagnosis and he cannot afford the luxury of an assistant or head intern to write death certificates for him. Neither the office nor the bedside technic of caring for your patient is learned from your teacher. Neither is the average teacher a shining light, as an illustrator of medical ethics. Once upon a time a young M.D. had on his staff a pair of twin patients. They gave him a great many uneasy hours and he urged the family to call in a great man on children's diseases. The family said they had experienced fatalities such as this before, and they could see no advantage in a consultation. The M.D. told them that there were a great many earnest workers in hospitals and laboratories who were progressing along these lines and it would be advisable to call in the best man in this line. One child died and the other lingered along. One morning early the phone rang and the father of the children said: "Doctor, you need not call at our house again; we called in your professor and he has taken charge of the case." The wrathful youth accosted his former idol and wanted to have the ethics of such action explained. "Why, my dear man, if people want me, I am going. You can't prevent people from wanting me."

A few years later he read the announcement that he could attend confinement cases at a well-equipped hospital and have as complete charge as though he belonged to the staff. He immediately made all arrangements for a case and one night, when not even a promiscuously active mosquito troubled his peaceful slumbers, his patient was delivered by one on the staff because he could not be

reached by telephone. Of course, the wicked telephone girl was to blame for that. He referred an interesting case to a specialist. The patient came back and reported that the diagnosis and line of proposed treatment had been concurred in, but he was advised to come back to the eminent man at least once a week, because he could be better cared for. A surgical friend of his took a case to a hospital a few days previous to a proposed operation. While there the patient was told that if a member of the staff performed that operation there would be no extra fee, outside of the hospital charges. The patient was advised to leave the hospital, under pretext of having deferred the operation to a future date, then come back and be operated on by a member of the staff. The maneuver was precisely executed. Another man, whose ethical ideas were clean and who lived up to his pretensions, referred all of his hospital cases to a way-up man. After numerous encounters in the operating room with a fellow-practitioner, he was told one day that his commissions must amount to quite a little. The poor unsophisticated chump said: "Why, that man would not pay any commission." Another idol went to the scrap heap when he was shown a tell-tale check for commission. Business is business and hypocrisy has never been rightly classified. A man to do surgical work needs special training and should limit himself to that class of work. If he was treated fairly he could easily work up a good line and be able to split an equable fee with men who kept him busy in his line. People are blindly and wrongly willing to pay larger fees for surgical work than they are for just as great skill in other lines. The young man starts with the best of intentions, but when he wakes up to the fact that his main competitor is a silk stocking, who poses as an internal-medicine man, he soon does like the rest and makes a grab for everything in sight or out of sight. He invades the obstetric line. Nice little fee, sure we will take that along." He will smilingly repair a lacerated perineum after a forceps or other delivery, play nurse and chambermaid, pocket the staid old hoodo of a \$15 fee. The same man will come back to amputate an elongated prepuce, call that surgery and pocket \$25. Reading scientific papers will never correct these and allied evils. One patient had a succession of serious diseases followed by a costal necrosis. Entering the house one day, the medical attendant was told that the medical student living next door who had been allowed to come in and keep track of the entire case had brought in his professor. This professor brought along his halo, seraped a little necrotic bone and saved the patient. A case of pneumonia went a similar route. "Why, doctor, when you said pneumonia, my sister, who is a trained nurse, went right out and got her professor." How much you dare pose for newspaper notoriety depends upon who you are.

Periodically, there is a splurge made about abortions. The general practitioner knows that the class of people who demand the services of an abortionist are seldom reached by him. There is a cold-blooded business side to this question. That means that there is a law of demand and supply. Were there no demand for an abortionist, there would be none. Some four years ago a teacher in one of our medical institutions called me up and said: "Doctor, can you come right over here and do a laparotomy for me?" He said to me: "Doctor, there must be a pint or more of ereolin solution in the abdominal cavity." I told him if there was he knew how it got there. Less than two months ago that same man could not be coaxed to cut short his office hour and come out to a consultation for \$25 cash. He has not advertised for these women. He sells them the latest contrivances to prevent conception, but if they make a mistake and still conceive, they may possibly know where to get relief. One woman who had three babies in three and one-half years of married life said to me: "Doctor, I don't see any of the rich people going to hell for getting rid of kids. Don't tell me they don't, for you know I am poor and do their washings. You can't fool me. They are carried to church and to the cemetery just the same as all the rest." There is another phase of this question. When you perform a life-saving curettement, that is surgical skill; when you get caught with a case of sepsis on hand, you are an abortionist. Not long ago, one of my patients had two babies ten months apart. The question to me amounts to this: Is there not some undiscovered truth under-

lying our sexual relations, the disclosure of which would do more real good in this world than anything that has been taught? It is the honest mothers, who wish to do what is right and yet want to protest that they are imposed upon, who really have a grievance. The question is not how to treat abortion. It is the same in this as it is with disease. We as medical men are dealing with results only. Why will women be so determined to abort that they will use catheters on themselves? It is because they do not know the *psychologic* consequences. I use the word *psychologic* purposely, because there is a new era dawning upon this earth, which will better a great many things. When you undertake to do better things, you can stop at nothing, not even an eagle-eyed program omit.

It is the general practitioner who comes in contact with petty and arbitrary rules of the health department, which produces no result excepting to impose hardships upon the general practitioner and upon poor people. Such things are never discussed here, where they belong. How many of you know about this ordinance?

DEPARTMENT OF HEALTH, CHICAGO.

An ordinance passed by the City Council Nov. 1, 1909, required all persons, firms or corporations to report to the Commissioner of Health within twenty-four hours any sale or gift of diphtheria antitoxin within the City of Chicago, giving the information indicated below.

FILL OUT AND MAIL THIS CARD.

These cards were sent to the drug stores, I imagine, to try and find out where all the antitoxin goes to. The various health departments should furnish a similar card to the marriage license clerks. After duly getting names and addresses of the contracting parties, have them declare to this: Are you intending to have children or not? If yes, who will be your obstetrician? If no, who will be your specialist? In some such manner, this great commonwealth might be able to formulate an adequate law on vital statistics. Vital statistics and the matter of paying a man for recording cases does not concern the silk stockings at all, because there is nothing in it for them. All the advance that has been made is directly in line for our rulers. They have a magnificent field for advertising themselves, and not even these branch societies are open to a general practitioner who might have something new. The state laws that have been enacted have not and do not restrain the quack nor the advertiser. They restrain you and me. We are respected and honored citizens by territorial limitation only. One by one the homeos, eclectics and osteos have been legalized. If the various healers and christian scientists will be careful and open a lucrative field of consultations for our silk stockings, they will also surely gain state recognition. A National Department of Health would merely further the ambition of our medical politicians and be of no practical value to the general practitioner. It would not be instituted for anything but political aggrandizement as long as our organization is run on the lines that it is run on at present.

This pretext of an organization has no voice in anything pertaining to medicine. The department of health is a one-man power, making laws out of individual opinions. They undoubtedly have the legal power to lock up a lot of healthy children with one afflicted with contagious disease in our unhealthy flats, but I doubt the justice of it. There is no moral right in depriving a child of fresh air and liberty and confining it with a contagious disease. Scarlet fever, measles and diphtheria are just as prevalent as ever in their periodic appearance, because you have not found out what causes them.

There is no doubt but that an institution like this County Hospital should be under the supervision of medical men. There is still less doubt about your getting fairer treatment from the layman who runs it than you do from the medical men inside of it. There is no fairness among us just because there is no power in our sham of an organization to regulate anything. The ex-interns of this hospital can stand together and hammer the general practitioner all they wish, because they are akin to our silk stockings, and secondly because they are prob-

ably better organized than we are. The primary object of education should be to teach every man to do his own thinking. The primary object of education to-day is to properly coach a man for a diploma and his prospective state license. If he loses his own thinkap, he must always remember to call his own professor in consultation. Of the possible 3,800 members in this city, 2,000 belong to the county society. Of the possible 450 attendants here, there never were one-third present. There is a reason for this. My reason is that you cannot better the conditions for the general practitioner by reading scientific papers to him. Just one practical every-day illustration. The druggists of this city are treating more cases of venereal disease than are the doctors. Suppose that this branch of the county society would ask these men in all fairness to quit that practice. They would take no notice whatever, and as in everything else, nobody cares for anything that might help the general practitioner. Why this multitude of medical colleges with all sorts of output? First legalize them, then penalize them to a sliding scale of perfection?

The multiplicity of medical colleges is foisted upon the all-tolerant public, just as is the multiplicity of churches. The initiative and referendum rightly applied is the only remedy for both of these evils. One man said to me that the general practitioner does not come here, because there is not a dollar in sight for him. This view is left for your own consideration.

I have presented my view of the case and am sorry that the general practitioner is not represented by a better and abler orator.

CUMBERLAND COUNTY.

At the regular June meeting of the Cumberland County Medical Society the following officers were elected for the ensuing year: R. L. Kurtz, Neoga, President; R. F. Stephens, Toledo, Vice-President; C. J. Hancock, Greenup, Secretary-Treasurer; S. E. Bigler, Neoga, Delegate; J. F. Adams, Hazel Dell, Medico-Legal Commissioner.

EFFINGHAM COUNTY.

The regular monthly meeting of the County Medical Society was held at the Courthouse at 2 p. m., President P. I. Cromwell presiding. Members present were Cromwell, Bing, Taphorn, Burkhardt, Buckmaster, Damron, F. W. Goodell, Haumesser, Holson, J. B. Walker and Dunn. Visiting were: J. W. Hamilton, Mt. Vernon; Philip Kimerly, Neoga; George S. Rainey, Salem; W. K. Newcomb, Champaign; S. A. Kuhns, Watson; George Hohman, Laclede; W. E. Frank, Newton; Mrs. E. Robb, Newton; F. W. Schroeder, Strassburg; A. R. Kieffer, St. Louis, Mo. Very interesting papers were read by the following members: J. B. Walker, "Diagnosis and Treatment of General Diseases of Stomach." Discussed by Drs. Akester, Newcomb, F. M. Goodell, Haumesser and W. L. Goodell. C. F. Burkhard, "Acute Gastritis." Discussed by Drs. F. W. Goodell, J. B. Walker, Kieffer and Rainey. G. H. Haumesser, "Ulcers of the Stomach." Discussed by Drs. Hamilton, Holson and Newcomb. F. Buckmaster, "Diagnosis and Surgical Treatment of Diseases of the Stomach." W. K. Newcomb then addressed the meeting. Subject, "Medical Organization." The meeting then adjourned to the Pacific Hotel, where an elegant banquet was enjoyed by the doctors and their wives at 7:30 p. m. H. TAPHORN, Secretary.

FULTON COUNTY.

The fifty-second meeting of the Fulton County Medical Society was called to order by Vice-President Coleman in the Churchill House parlors, Canton, July 5, 1910, at 2 p. m.

Minutes of previous meetings were read and approved. Applications for membership from Drs. N. W. Miller and J. W. Welch were read. In the absence of

the membership committee. Dr. Shallenberger moved that the chair appoint a committee *pro tem*. Carried. The chair appointed Drs. Shallenberger, Beaty and Oren as such committee. Shallenberger moved a suspension of the rules and that the membership committee report at this meeting on the applications of Drs. Crone, Miller and Welch. Drs. Stoops and Beaty moved the chair appoint a committee of three to draft resolutions of respect for Dr. J. E. Sutton and regrets at the loss of his companionship caused by his permanent removal to Washington, where he retires from practice and makes his home with his only son. Carried, and the chair appointed Drs. Stoops, Reagan and Nellis as such committee. The Membership Committee reported favorably on the applications of Drs. Crone, Miller and Welch. Shallenberger moved adoption of the committee's report, and that the secretary cast the vote of those present in favor of the election to membership in the society of Dr. Crone, of Canton, Drs. Miller and Welch, both of Cuba. Carried. The secretary cast ten ballots and the chair declared the applicants elected.

Dr. Beaty, the only member on the program present, read his paper on "Drugs Acting on the Blood, Heart and Blood-Vessels." General discussion followed. Dr. Coleman presented a case of ulceration of the arm.

Dr. Allison moved the chair appoint a committee of two, including the secretary, to prepare a program for the annual meeting, and a committee of three on arrangements for the annual meeting, and a committee to personally canvass the county previous to the annual meeting. Carried. Dr. Allison and the secretary were appointed as program committee. Dr. Scholes, Kirby and Chapin were appointed committee on arrangements, and Drs. W. D. Nelson, Jr., was the committee to arrange to canvass the county.

Those present were Drs. Coleman, Beatty, Shallenberger, Oren, Stoops, Putman, Miller, Standard, W. D. Nelson, Jr., Seymour Nelson, Roberts, Parks, Scholes and Allison.

D. S. RAY, Secretary.

At a regular meeting of the Fulton County Medical Society, held in Canton, Ill., on July 7, 1910, the following resolutions were adopted:

WHEREAS, Our fellow physician and friend, Dr. J. E. Sutton, the first President of this Society, and forty years a resident of Canton, has left to take up his residence in another state; therefore, be it

Resolved, That we greatly regret to lose from our community a man who has always preeminently exemplified, in his civic and professional life, both the virtues and characteristics of a good citizen, and the high attainments of an able physician. That we are keenly conscious of the fact that the loss of such a man, whose life was always in the right and whose professional services will be missed by a great host of friends and patrons, cannot easily be replaced. That his influence, always exerted both as a citizen and physician in the cause of justice and humanity, cannot soon be lost, but will continue to act and be felt by the community for years to come, and more so by his professional associates with whom he dwelt in harmony and peace. That it is our sincere and heartfelt wish that he may live and enjoy many years of comfort and happiness.

P. H. STOOP, M.D.,
E. W. REAGAN, M.D.,
J. M. NELLES, M.D.,
Committee.
D. S. RAY, Secretary.

KNOX COUNTY.

The seventeenth annual meeting of the Knox County Medical Society met at Galesburg, at the county court house, on April 21, with President Dr. J. E. Cowan in the chair. The following were present at the meeting: Drs. Baird, Birmingham, Bohan, Bower, Bradley, Bryant, Chalmers, Cowan, Cox, Evans, Ewing, Finley, Franing, Hall, Hanawalt, Hertig, Horrell, Johnson, Longbrake, McClanahan, Maley, Matheny, Nash, Percy, Ripley, Ryan, Stotts, Galesburg; Beecher, Gilson; Bellwood, M. W. Bisson, C. F. Bradway, E. H. Bradway, Abingdon; Browning, Hermon; Cole, Williamsfield; Davis, Avon; Giles, Knoxville; Knowles and Walker, Maquon; Parker, Yates City; Stewart, Oneida. Visitors: Drs. J. Raw-

son Pennington and Van Pelt, Chicago; J. A. Egan, Secretary of the State Board of Health, Springfield; Waterous, Galva; Holliday, Patton, Stocks, Lindorf and Wells, Monmouth; Zimmerman, Cameron; Betts, Prairie City; Duntley, Bushnell; Bacon, Macomb; Opre, Victoria. The morning session consisted of the business meeting, the reading of communications, reports of officers and committees, and the election of officers. The applications of Drs. R. F. Karney, Galesburg, and H. E. Opre, Victoria, were received and after favorable action by the board of censors both were unanimously elected to membership in the society.

Officers were elected for the ensuing year as follows: For president, Dr. E. E. Davis, Avon; for vice-president, Dr. D. J. Evans, Galesburg; for delegate to the State Medical Society, Dr. W. O'R. Bradley, Galesburg; for alternate delegate, Dr. L. Becker, Knoxville; for censor, Dr. L. R. Ryan, Galesburg; for secretary-treasurer, Dr. G. S. Bower, Galesburg.

The afternoon was taken up with the following: "Psychotherapy and Its Relation to Medicine and the Ministry," Dr. W. S. McClanahan, Galesburg. This paper was on a subject which to a great extent is neglected by physicians in the treatment of their cases and, as the Doctor stated, has driven many patients into the hands of quackery.

The second paper was on "Dysmenorrhea," by Dr. J. E. D. Silcox, Rio. The Doctor was unable to be present but was kind enough to send his paper and the same was read by Dr. F. G. Hall, Galesburg. This was a very good paper, treating as it did of a not uncommon ailment and was greatly appreciated by all present.

The third paper was on "The Pain from Gastric Ulcer from a Diagnostic Standpoint," Dr. Fred Ewing, Galesburg. This paper was thoroughly appreciated as the differential diagnosis, by modern methods, of the pain in gastric ulcer was treated in a very able manner.

The next was a lecture on "Fistula," Dr. J. Rawson Pennington, Chicago. By the aid of charts and a blackboard the lecture was made very interesting and instructive. Dr. Pennington was tendered a vote of thanks for coming to Galesburg and appearing before the society.

The next was an address by Dr. J. A. Egan, Secretary of the State Board of Health, Springfield. Dr. Egan spoke on the state medical laws, statics with regard to examinations, reciprocity, sanitary inspection, the free distribution of diphtheria antitoxin, and the regulation of medical colleges. At the close of his address Dr. Egan was given a vote of thanks for coming to Galesburg.

At 6:30 o'clock the members of the Knox County Medical Society, with the ladies and invited guests, enjoyed a banquet at the Elks' new home, after which the seriousness of the day's meeting was laid aside and a pleasing program of a lighter vein was rendered.

D. J. EVANS, Secretary.

LAKE COUNTY.

The meeting of the Lake County Medical Society was held June 23, 1910, in the dining room of the Congregational Church, Waukegan, Ill. The Kenosha County (Wis.) Medical Society, to the number of twenty, were the guests of the Lake County Medical Society at this meeting. Following a dainty luncheon served by the ladies of the Congregational Church, Dr. A. E. Halstead, of Chicago, read a most excellent paper on "Ulcer of the Duodenum." This was discussed by Drs. Adams and Gephart, of Kenosha, and Drs. Foley and Gavin of Waukegan. A motion to extend a vote of thanks to Dr. Halstead received the unanimous support of both societies. After this Dr. Halstead was compelled to leave the meeting because of other engagements. We then proceeded with the election of officers. The following were elected: Dr. Martin E. Fuller, of Wauconda, was elected president; Dr. J. M. Palmer, of Grayslake, vice-president, and Dr. W. H. Watterson secretary and treasurer. Drs. Theodore S. Proxmire, Edward F.

Shaffer and Mary C. McClellan were then voted as members of the society after having received the sanction of the board of censors. Dr. Fuller was then appointed by the chairman as a member of the Almshouse Committee in place of Dr. Elva Wright, resigned.

The regular program of the evening was then given. Dr. E. Ford Gavin, of Waukegan, gave a most thorough paper on the subject of "Otitis Media." Dr. W. S. Bellows, of Waukegan, gave an excellent paper on "Intestinal Obstruction," which showed great work in preparation as well as record of personal investigation and research. Dr. O. M. Steffenson, of Chicago, in place of reading his paper on "Diffuse Suppurative Peritonitis," owing to the extreme heat of the evening and the lateness of the hour, gave a summary of his paper. Dr. L. H. Tombaugh was then appointed by the newly elected president as medico-legal member of the State Medical Society from Lake County. A vote of thanks was then extended to the society for their papers, to the Kenosha County Medical Society and for their presence which so encouraged the local society in their work. The meeting then adjourned.

W. H. WATTERSON, Secretary.

ROCK ISLAND COUNTY.

The Rock Island County Medical Society dispensed with its regular June meeting, and in its stead there was held the Second Annual "Harmony" (Get-Together Dinner) of the medical society and the Rock Island Retail Druggists' Association, Friday evening, May 27, at the Moline Club, Moline, Ill. After dining, Toastmaster Dr. F. H. First, of Rock Island, introduced Hon. William A. Meese, of Moline, who spoke on "The Doctor, the Druggist and the Law." Then followed Dr. H. B. Hemenway of Evanston, whose topic was "Old and New Ideas in Medicine and Pharmacy." The Criterion orchestra furnished music for the evening and a flashlight group picture was taken. About sixty physicians and druggists were in attendance.

ALBERT N. MUELLER, Secretary.

ST. CLAIR COUNTY.

The regular quarterly meeting of the St. Clair County Medical Society was held July 7, 1910, at Priesters Park, Ill. President Hilgard in the chair. Members present were: Drs. Hilgard, Hansing, Ostrich, J. W. Twitchell, Wiggins, Duey, Lippert, Sloy, Miller, Fairbrother, Lane and Dr. Dissell, of Millstadt.

Minutes of previous meeting read and approved. On invitation ex-President Wiggins of our State Society gave a general account of the Danville meeting, and of his impressions relative to the needs of the medical profession in our state, gleaned during his year of incumbency. He called attention to our neglect in not adopting means which have proved efficient in organizations in other departments of human activity, and prophesied that before the medical profession could obtain proper recognition and effectually resist its improper exploiting by individuals, corporations or the government, it would have to place its affairs in the keeping of permanent paid officers.

He called attention likewise to conditions now existing in Europe where fees in many instances, ranged from \$2.50 to 25 cents per visit, and where only those exceptionally favored in the profession were accorded recognition, or secured financial returns commensurate with their work or worth. He stated that already in this country in some of the eastern states the fees paid the general practitioner are so low as to seriously affect his livelihood, and by reason thereof effort toward higher scientific attainment is discouraged, that while primarily the profession would suffer, in the end the average community which must of necessity depend upon the general practitioner in its hour of need, would suffer, without resource.

Following Dr. Wiggins' talk, discussion by several members present.

Dr. Fairbrother made the following motion which was promptly seconded:

Resolved, By the St. Clair County Medical Society, that we as a society recommend that the office of president of the State Society be a salaried office, and be for a term of four years.

The motion was unanimously carried.

There being no scientific paper, it being impossible for the essayist to attend, Dr. Wiggins made some remarks regarding Ludwig's angina, explaining rapidity of onset and extension, danger of procrastination in handling, necessity of early diagnosis, necessity of immediate action following diagnosis as disease runs only a short course, and unless followed by immediate surgical procedure the patient will not survive.

Following the discussion by Drs. Hilgard, Twitchell, Ostrich, Fairbrother and Skaggs, Dr. Fairbrother cited a number of cases from *Annals of Surgery*. Refreshments were then served, after which the Society adjourned to meet Oct. 6, 1910.
E. H. LANE, M.D., Secretary.

STEPHENSON COUNTY.

The summer meeting of the Stephenson County Medical Society was called to order at the Court House in Freeport on Thursday, July 14, 1910, by temporary chairman, Dr. D. C. L. Mease. The following answered to roll-call: Drs. Bobb, Clark, Hewetson, Hutchins, Linda K. Hutchins, W. A. Harlan, Karcher, Leavy, Mease, Peck, Stealy, Snyder, Rideout and Rosenstein. The following program, prepared by the president, was then given:

A Few Diagnostic and Therapeutic Points Picked Up Here and There. Dr. D. C. L. Mease. Medical Treatment for Gall Stones in Cases of Pregnancy. Dr. W. A. Hutchins. Mucous Catarrh of the Bowels. Dr. Mary L. Rosenstein. Dr. J. H. Stealy presented a clinical case before the society. A man, aged 47, American, white, a farmer, married. Family history negative, except that a sister died of cerebral tuberculosis (following tubercular peritonitis) a few months ago. However, this patient was not living in the same family with the sister. Personal history: Has had the common diseases incident to childhood. About six months ago patient complained of loss in weight, some pain in the left hypochondriac region, general inanition, loss of memory slightly noticeable to patient, occasionally nauseated but no vomiting. Occasional hemorrhages from the bowels. No fever, pulse normal. Blood examination revealed reds 2,800,000, whites 7,200. Malaria-plasmodia not present. No nucleated reds, no eosinophils. Whites consisted of about 50 per cent. lymphocytes. Hb. 70 per cent., color index approximately 1.2 per cent. Reds showed little poikilocytosis and on an average were a little large and moderately well staining. A very large spleen, reaching to pelvis. Diagnosis, splenic anemia.

Correspondence between the secretary and our representatives in Congress relative to senate bill 6049, as presented by Senator Owen, of Oklahoma, was read, and the Society was pleased to learn that those written to were of the opinion that the time was opportune for the establishment in the cabinet of the president, of a Department of Health.

The report from the committee appointed to wait on members of the library board was called for but there was no report to be made. The chair asked for some expression from the members on this question of the Society having a room in the library building. All favored the idea. Dr. Stealy informed us that had the Society proper rooms for a library he would make a subscription toward an endowment.

Dr. C. J. Leavy was voted an active member of the Society. No further business the meeting adjourned.

J. SHELDON CLARK, Secretary.

At a meeting of the Stephenson County Medical Society the following resolution was adopted: The Stephenson County Medical Society is again called upon to chronicle the death of one of its members, L. M. Currier, M.D., who died

Saturday morning, July 16, 1910. In his death we feel that the profession has lost one of the oldest and best known practitioners in the city of Freeport, a physician of more than ordinary intelligence and one who, through years of practice, endeared himself in the hearts of many of our older citizens. He at one time enjoyed a large clientele until within recent years, his health becoming impaired, he could no longer devote his entire attention to his professional duties. Although Dr. Currier was a seetarian in medicine, his mind was broad and well balanced and his personal views never entered into conflict with those of his fellow practitioners who differed from him in practice and theory, being always ready and willing to give or receive as the case might be. Therefore, be it

Resolved, That the sympathy of the Society be extended to his family and friends, and a copy given to each of the papers for publication, and also spread upon the minutes of this Society.

D. C. L. MEASE,
R. F. HAYES,
H. E. MORRISON.

Book Notices.

DISEASES OF THE GENITOURINARY ORGANS. By Edward L. Keyes, Jr., M.D., Ph.D., Clinical Professor of Genitourinary Surgery, New York Polyclinic Medical School; Surgeon to St. Vincent's Hospital; Lecturer on Surgery, Cornell University Medical School, etc.; 975 pages, with 4 colored plates and 195 other illustrations. D. Appleton & Co., New York and London, 1910. Cloth, \$6 net.

Dr. Edward L. Keyes, Jr., grandson of Van Buren and the son of E. L. Keyes, both well known writers on genitourinary surgery, brings to his work intelligence and enthusiasm which bids fair to make him a modern edition of his distinguished ancestor. Certainly the volume under consideration is up to date and gives reliable information to the reader on the important subjects under consideration. More writers, too, on these diseases are making rapid changes and the books of even five years ago are not to be relied on. Our readers will not make a mistake in securing copies of Keyes' work.

AMERICAN PRACTICE OF SURGERY. A Complete System of the Science and Art of Surgery, by Representative Surgeons of the United States and Canada. Editors Joseph D. Bryant, M.D., LL.D., Albert H. Buck, M.D., of New York City. Complete in eight volumes. Profusely illustrated. Volume VII. William Wood & Co., New York.

The system of American Surgery by Drs. Bryant and Buck is rapidly approaching completion and this volume is of particular interest to the medical men of Illinois because three of the important articles are contributed by Drs. Andrews, Harris and Ochsner of Chicago. The article by Dr. Andrews on Hernia is a classical exposition of that subject. Surgical diseases and wounds of the stomach and esophagus are considered by Dr. Ochsner in a 120-page contribution. Dr. Harris contributes an article on the diagnosis of tumors of the abdomen. The other articles are by well-known writers and are complete and as a usual thing up to date.

The article on the vermiform appendix by the late Dr. McCosh of New York City is probably the only exception. Dr. McCosh died December, 1908, and of course his article is only a statement of our knowledge up to that time. Since then important improvements, particularly in the treatment of diffuse suppurating appendicitis, have been made which would no doubt have been added to his article, had Dr. McCosh lived. The volume as a whole, however, maintains the high standard set by the other volumes and the whole series should be in the library of every professional man interested in surgery.

NEWS OF THE STATE

PERSONAL.

Dr. Pierson, of Taylorville, has removed to Pontiac.

Dr. Robert S. McCaughey, Hoopeston, is in Germany.

Dr. Benjamin H. Frayaer, Chicago, has left for Europe.

Dr. H. O. Collins has removed from Pana to Wichita, Kansas.

Dr. Matt Hill, of Taylorville, will remove to Winfield, Kansas.

Dr. W. T. Murray, of Springfield, has removed to Dayton, Ohio.

Dr. R. H. Garm, of Beardstown, has gone to Europe for post-graduate study.

Dr. and Mrs. Albert E. Mowry sailed from Montreal June 30, for Europe.

Dr. W. E. Miller, of Columbus, Ill., has been appointed county physician.

Dr. John W. Huston, Virginia, has gone to Asheville on account of his health.

Dr. Wakefield, of Springfield, will go to China as a medical missionary in September.

By the will of the late S. E. King, Ottawa, \$40,000 has been left for a hospital in Ottawa.

Dr. F. B. Hoover has removed from Chicago to 502 Goodwin Institute, Memphis, Tenn.

Dr. Chas. C. Clement, assistant surgeon at Eye and Ear Infirmary, Chicago, sailed for Europe June 1.

Dr. and Mrs. Wm. O. Krohn have left for Europe by way of a motor trip through New England to Montreal.

Dr. W. H. Grayson, of Granite City, was overcome by heat while attending the Elks convention at Detroit, Mich.

Dr. C. K. Bates will return to Camp Point to resume his practice, after spending some time in Sweetwater, Wyoming.

Dr. H. H. Kleinpell, of Chicago, is spending the summer in New York Polyclinic. Dr. S. W. Forney, a recent intern of the Chicago Polyclinic and Henrotin Memorial hospitals, is looking after his practice.

NEWS ITEMS.

—Dr. J. H. Huber, of Springfield, Ill., has bequeathed \$50,000 to Pana, Ill., for the establishment of some benevolent institution.

—Work is to be begun on a new hospital at Monmouth. The new hospital will be modern in every respect. The new building will be erected at a total cost of \$37,000.

—The following officers were elected at the last annual meeting of the Chicago Surgical Society: President, Jacob Frank; vice-president, Chas. Davison; secretary, Frederic A. Besley; treasurer, Dean Lewis.

—W. T. Stuart, M.D., has sold his residence on Douglas Boulevard and will take up his home on 1113 Pratt Boulevard, Rogers Park. The Doctor has also changed office from the ninth to the eighth floor of the Marshall Field Building.

—Dr. Carl Wagner and his daughter, Louise Wagner, of 1563 La Salle avenue and Dr. Paul Kreye, of 161 West North avenue, were bruised and cut when an electric runabout in which they were riding, was run into from behind by a speeding taxicab on Michigan avenue, near Hubbard place.

—Announcement was made July 1 of the establishment of the Otto S. A. Sprague Memorial Institute for the scientific investigation of the causes of disease, with an immediate endowment of \$1,000,000. The trustees say there are prospects for increasing the endowment to several million dollars.

—Dr. Fred L. Orsinger, 750 West Congress street, who is said to have fought the State Board of Health for thirty-two years against taking out a license to practice medicine, was indicted by the June Grand Jury of Cook County, on a charge of having performed an operation on Pauline Sproce, which resulted in her death.

—It is reported that \$60,000 has recently been contributed for the construction of a new three-story medical building, at the corner of Fulton and Ada streets, Chicago, for Loyola University Medical Department. This is to provide space for anatomic and chemical laboratories and for two large lecture rooms. It is also reported that provisions have been made for five instructors, who will devote all of their time to teaching in the medical school.

—The Kankakee State Hospital Medical Society, the membership of which is composed of the medical staff members of the Kankakee State Hospital and Psychopathic Hospital, was organized in June. The officers are: Dr. Frank P. Norbury, president; Dr. Chas. F. Read, vice-president; Dr. W. F. Lorenz, secretary and treasurer. Dr. Douglas Singer was delegated to perfect organization of the other state hospitals in order that a state association may be formed. Similar societies have been formed at Peoria and Jacksonville hospitals.

—Dr. J. Wen Glesky, for several months assistant superintendent and chief of the Eastern Illinois Medical Hospital for the Insane, has tendered his resignation, to become effective either July 15 or August 1. He will become a member of the medical staff of the Sacred Heart Sanatorium of Milwaukee. Dr. Glesky filled the vacancy caused by the resignation of Dr. Graham, having passed the competitive examination with high standing. He was active superintendent of the institution during the interval between the resignation of Dr. Greene and acceptance of Dr. F. P. Norbury. He is known at the institution as being a thoroughly capable physician and executive.

—The Chicago Fresh Air Hospital opened its doors to patients July 1. It is the only exclusive tuberculosis hospital in Chicago and accepts patients in any stage of pulmonary tuberculosis. There are no free beds but the rates are very low. Fresh air for relief of the late cases and treatment for the cure of the early ones. The hospital is located on a twenty-acre tract of farm land in Rogers Park. The following are the officers and directors: President, James A. Patton; vice-president, A. J. Ochsner, M.D.; treasurer, James Simpson; secretary, W. A. Faust. The directors are the officers, together with the following: Wm. G. Bele, F. A. Delano, Arthur Meeker, F. A. Wagner, Samuel Insull, and Ethan Gray, M.D., who is also medical superintendent of the hospital.

—The Chicago school authorities have taken up the subject of doing what can be done to prevent the injurious use of vision by children in school. Each school room is to bear a placard with a few needed suggestions on the proper use of the eyes. The main points are embodied in the following paragraph: "Your eyes are worth more to you than any book. Your safety and your success in life depend on your eyes. therefore take care of them. Always hold your head up when you read. Hold your book fourteen inches from your face. Be sure that the light is clear and good. Never read in a bad light. Never read with the sun shining directly on your book. Never face the light while reading. Let the light come from behind or over your left shoulder. Avoid books or papers printed indistinctly or in small type. Rest your eyes by looking away from the book every few minutes. Cleanse your eyes night and morning with pure water.

REMOVAL.

Dr. Arthur H. de Mendoza, of 1117 Belmont Avenue, Chicago, has removed to Piper City.

PUBLIC HEALTH.

—Fresh air schools for weak or tuberculosis children were opened in the north, west and south sides of Chicago, June 12, by the board of education, in cooperation with philanthropic agencies. No definite course will be given, but instructions will be given the children in hygiene and dietetics. Four meals a day will be furnished the children by the Chicago Permanent School Extension Committee of the Woman's Club, and a physician will be provided by the Tuberculosis Institute.

—The campaign for better health conditions in Chicago includes a permanent milk commission, which will have an appropriation to carry on its investigations and experiments; milk ordinances are to be strengthened, and the transportation of milk is to be looked after more carefully; the making of ice cream is to be supervised; further attention is to be given to the dumping of refuse into the lake; dry sweeping in the down town districts will be reduced to the minimum, and the ten-hour law for women, recently upheld by the supreme court, will be vigorously enforced.

—The health department has started its campaign in behalf of the lives of infants in the city of Chicago. The organization controlled by the infant welfare committee, of which the health department, the United Charities and the Visiting Nurses Association are the chief constituent agencies, is so subdivided that practically every available organization has been brought into it and every section of the city is reached. Along with the declaration that a strict supervision of the city's supply of milk is a big feature of the work, came the announcement that Alderman Francis W. Taylor, chairman of the city commission on the pasteurization of milk and tuberculin testing of cows, would leave next Wednesday to study milk supervision methods in France and Switzerland, Austria, Denmark, Germany and England. He expects to return about September 10. He will be accompanied by Mrs. Taylor. A "baby register" has been opened at the office of the United Charities, 51 LaSalle street, in which is entered the name of every known baby, sick or well, in Chicago. From these records field workers are assigned to the districts where sickness and mortality is the greatest.

—Chicago, the second largest city in the United States, has the lowest death rate from typhoid fever of any of the large cities in this country. In order to reduce the present figure a systematic study of typhoid fever in Chicago will be made this season. Dr. Leslie L. Lumsden, past assistant surgeon U. S. P. H. and M. H. Service, has been detailed to investigate typhoid fever in Chicago, in cooperation with the Chicago health authorities. The plan is to make an extensive study of typhoid in as many parts of Chicago as possible. In this work Dr. Lumsden will have the help of not only the health department but also of the Visiting Nurse Association and other organizations. The medical inspectors and laboratory of the health department will report typhoid direct to Dr. Lumsden. The cooperation of physicians is also requested. It is desired that physicians shall report the termination of all cases of typhoid, giving date of recovery, in order that examination may be made to determine if the patient is safe. Nurses and inspectors will visit each case to inquire into the measures employed for the safeguarding of the community. This is only for supervision and will leave to the physician in attendance every detail of treatment. Blood examinations and blood culture will be made in the laboratory, in which work it will be assisted by Professor Jordan, of University of Chicago. Dr. Lumsden has had wide experience in the investigation of typhoid outbreaks in numerous points of the country, and it is hoped to make the record of Chicago equal to that of European cities like Berlin, Vienna and Rotterdam, where the average is between three and six deaths for each 100,000.

NEW INCORPORATIONS.

—Illinois College for Midwives, Chicago; teach science of midwifery. Incorporators: Anthony M. Soukup, M.D., Flora Soukup, Rosa Soukup.

—Illinois Physicians' Drug Association, Chicago; capital, \$25,000; manufacturing and dealing in drugs, physicians' supplies, etc. Incorporators: F. W. Egel, William Chrones, Barnett Lyon.

MARRIAGES.

EDWARD PATERA, M.D., to Miss Jane Smyth, both of Chicago, July 2.

LEWIS W. DUDLEY, M.D., of Elgin, Ill., to Miss Marion T. Connell, June 29.

MAX LOUIS MENDEL, M.D., Chicago, to Miss Marie Hughes, of Vicksburg, June 8.

JOHN MERLIN ALFORD, M.D., Galva, Ill., to Miss Shirley Foote, of Chicago, June 21.

HENRY SYMES STINSON, M.D., to Miss Mary H. Broadwell, both of Berwyn, Ill., June 18.

FREDERICK GEORGE DYAS, M.D., Chicago, to Miss Mabel Freer, of Hinsdale, Ill., June 29.

WILLIAM MACKEE CROSIER, M.D., Alexis, Ill., to Miss Louise Lafferty, of Chicago, June 8.

THOMAS G. McLIN, M.D., to Miss Nena E. Inskeep, both of Fairfield, Ill., at Chicago, June 24.

CHARLES BUTTERFIELD, M.D., Rock City, Ill., to Miss Charlotte Heath, of Lawrence, Mich., recently.

FREDERICK OSCAR TONNEY, M.D., Chicago, to Miss Clara Evelyn Sanborn, of St. Paul, Minn., June 4.

DEATHS.

SYLVANUS F. HEATH, M.D., Harvard Medical School, Boston, 1866; died at his home in Gilman, Ill., June 16, aged 71.

CHARLES FREDERICK MOORE, M.D., Rush Medical College, Chicago, 1888; a member of the Illinois State Medical Society; died at his home in DeKalb, June 10, aged 48.

HENRY C. EARLY, M.D., of Granite City, 38 years old, committed suicide, by a pistol shot, on the evening of July 12, 1910, in his office. Interment at New Douglas, Ill., on July 14.

HARVEY S. SEYMOUR, M.D., Chicago Homeopathic Medical College, 1883; of Sugar Grove, Ill.; a veteran of the Civil War; died at the Aurora, Ill., Hospital, June 23, from pernicious anemia, aged 66.

CHARLES DEWITT EARLY, M.D., Rush Medical College, Chicago, 1901; formerly county physician of Peoria County, Ill.; died suddenly while seated in a chair at the Elks' Club, Peoria, Ill., July 5, aged 32.

GEORGE W. COX, M.D., College of Physicians and Surgeons, Keokuk, Iowa, 1865; formerly of Clayton, Ill.; died at the Masonic Home at Sullivan, Ill., June 16, where he had lived for the past three years, aged 49.

DANIEL A. SHEFFIELD, M.D., Northwestern University Medical School, Chicago, 1867; Rush Medical College, Chicago, 1886; formerly of Apple River, Ill., died at the home of his daughter in Lamont, Iowa, June 25, aged about 80.

SIMON B. BEER, M.D., Eclectic Medical Institute, Cincinnati, Ohio, 1874; of Fairview, Ill.; served in the 103d and 36th Illinois Infantry throughout the Civil War; died in a hospital in Peoria, June 23, following an operation, aged 72.

ARTHUR LUDWIG ANDERSON, M.D., University of Michigan, Department of Medicine and Surgery, Ann Arbor, 1908; a member of the American Medical Association; health officer of Aurora, Ill.; died at the St. Charles Hospital, Aurora, June 26, as the result of complications following an operation for appendicitis some time before, aged 28.

JOHN WESLEY TOPE, M.D., Rush Medical College, 1870; a member of the American Medical Association; a veteran of the Civil War; superintendent of the Asylum of the Insane at Dunning for five years; member of the Surgical Staff of Cook County Hospital for fourteen years; founder of the Oak Park Hospital; president of the Alumni Association of Rush Medical College; president of the Aux Plaines branch of the Chicago Medical Society; died at his home in Oak Park, June 18, aged 65.

The AMERICAN JOURNAL OF PHYSIOLOGIC THERAPEUTICS.—This new journal, the first number of which is dated July, 1910, is published by the editor, Henry R. Harrower, of 72 Madison Street, Chicago. Dr. Harrower has produced a journal of distinct value, and we welcome him and his journal to the editorial field. There is probably needed just such a journal as the doctor attempts to make, certainly the non-medical methods of treatment are deserving of every consideration on the part of the practitioner, and we expect for this journal a support which the subject deserves.

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No. 3

ORIGINAL ARTICLES

THE LOCAL EFFECTS OF GALL-BLADDER INFECTIONS AND GALLSTONES UPON THE DIGESTIVE TRACT AND LIVER.*

FRANK BILLINGS, M.D.
CHICAGO

Infection of the gall bladder may be either acute or chronic and may be associated with the presence of gallstones. Acute infection of the gall bladder may be due to the colon or typhoid bacillus or to the pneumococcus, streptococcus or staphylococcus. Acute cholecystitis may be associated with suppuration and resulting empyema of gall bladder or with gangrene. Acute cholecystitis without gallstones is a painful affection. The pain is usually referred to the gall bladder region and epigastrium, and sometimes with pain in the right scapular region. There is marked rigidity of abdominal muscles and acute tenderness of the abdomen, more marked in the region of the gall bladder. Nausea, vomiting and great prostration is usually present. With the establishment of gangrene, as with gangrene of the appendix vermiformis, there may be a diminution of the local pain, tenderness and a lessening of the general symptoms. As in gangrenous appendicitis the condition is a dangerous one and doubly so because of the apparent cessation of the disease. Cholelithiasis with acute cholecystitis does not differ materially from cholecystitis without gallstones with the exception that there may be a more marked pain from biliary colic and perforation may occur more readily because of the presence of stone or stones.

Acute cholecystitis with suppuration or gangrene may rupture and general septic peritonitis occur; or in the event of formation of adhesions result in a circumscribed abscess which may exist for a considerable period of time. In one patient seen by the writer, the abscess filled the

* Read before the Chicago Medical Society, April 20, 1910, in a symposium on Gall-Bladder, Gall-Ducts and Liver.

upper right quadrant of the abdomen, thoroughly walled off from the general peritoneal cavity and contained not less than one quart of pus. Such an abscess may rupture through the abdominal wall or may burrow in various directions opening in the lumbar region of the back or downward along the posterior abdominal cavity to the psoas muscle to a point in Scarpa's triangle or passing upward under the liver to the diaphragm rupture into the pleural cavity or through the lung and finally may rupture into the stomach or the intestinal tract. Such an abscess may be followed by abscess of the liver. With the formation of adhesions between the gall bladder and stomach or duodenum or colon, the gall bladder may rupture directly into the gastrointestinal tract into which it may discharge its contents. Spontaneous cure of cholelithiasis may result in this way.

Chronic cholecystitis with or without gallstones is usually associated with repeated attacks of increased infection manifested by more or less pain in the gall bladder region referred to the epigastrium and often to the right scapular region. Gallstones are usually present. Attacks of infection with colic may last for a variable time, from a few hours to several days. The pain may be very severe or may be mild. There is usually associated with it nausea, vomiting and more or less general disturbance, including sometimes a considerable fever. Jaundice is not present unless the cystic duct has become dilated from the presence of stone and in consequence may press upon the hepatic duct, causing obstruction and jaundice. Some patients may suffer from almost continuous pain or a sense of dull aching in the right upper belly but usually there may be one or more attacks of biliary colic. Chronic cholecystitis is usually associated with a thickening of the gall bladder wall and contraction of that organ. In a few instances with obstruction of the cystic duct due to the continued infection or to impacted gallstones, the gall bladder may become distended with a mucus-like fluid and present itself as a pyriform tumor.

With the passage of stone into the common duct, the biliary colic becomes more severe than that due to the presence of stone in the gall bladder and cystic duct. This increased pain is probably due to the greater tension and stretching in the gall bladder and ducts above the obstruction. Vomiting, chill, fever and profuse sweating with great depression of the circulatory apparatus is usually present. The severity of pain and marked depression may result in death. The gallstone may lodge in the ampulla of Vater and produce the well-known condition described by Fenger as "ball valve stone." This consists of a condition of almost continuous jaundice but with periods of an increase in the amount of bile thrown into the general circulation associated usually with chill, fever and sweating lasting for a day or a few days to be followed by a partial or complete cessation of all of the symptoms for a variable period. There may be pain with the paroxysm with chill, fever, sweating and increased jaundice, or pain may be absent. With the passage of a stone into the intestine there may be entire relief of all of the symptoms and if it be a single stone spontaneous and permanent cure may result.

A large gallstone escaping from the gall bladder through the gall duct or by ulceration into the stomach or intestine, may result in intestinal obstruction. Following cholecystitis, whether acute or chronic, calcification and atrophy may result. Cholecystitis is usually associated with more or less localized peritonitis and resulting adhesions of the organ to the surrounding structures, including the liver, the stomach, the duodenum and transverse colon. Such adhesions also follow surgical operations upon the gall bladder tracts. Usually these adhesions are not dense enough to interfere in any way with the functions of the organs involved. In some instances, however, the adhesions may be so dense as to interfere especially with the motility of the stomach. This is more likely to occur when acute cholecystitis with empyema and resulting localized abscess has occurred.

Infection of the common bile duct with usually the presence of stone may result, as has been shown by Opie in infection of the pancreas through the pancreatic duct. Either acute or chronic pancreatitis may result. Chronic pancreatitis is far more common than the acute form and rare instances may result in such involvement of the whole pancreas, including the Islands of Langerhans that diabetes mellitus develops.

In acute cholecystitis with or without gallstones, the liver may be moderately enlarged and if palpable, usually is tender. As stated above, abscess of the liver may result from a phlegmonous cholecystitis. Chronic cholecystitis is usually associated sooner or later with slight enlargement of the liver and rather marked tenderness of the organ. When the hepatic or common duct is obstructed through infection or through gallstone, distention of the liver from accumulated bile results. If this condition is permitted to continue biliary cirrhosis occurs. Long standing chronic cholangitis is a serious condition associated as described above with periods of chill, fever, sweating, depression and jaundice. This has been called hepatic intermittent fever and before the period of the modern surgical relief of such conditions by drainage of the gall tracts, resulted in death. Cholecystitis with or without gallstones and especially when associated with biliary colic, often results in dynamic ileus. The condition is associated with nausea and vomiting, great distention of the abdomen, marked abdominal rigidity, tympanites and constipation. The condition is most like that produced by a rupture of any of the hollow viscera and septic peritonitis.

Functional Disturbances.—During attacks of acute cholecystitis or biliary colic there is usually nausea and vomiting. Between attacks of biliary colic the patient frequently complains of subjective disturbances of the stomach. There may be a sense of fullness and weight and more or less tendency to the eructation of gas after eating. This may be immediate or two or three hours after eating. Sometimes there is pain from one to two or three hours after eating and sometimes there is pain immediately after eating, especially if the patient take coarse food or take a full meal. The pain is usually of an aching, dragging character and may be referred to the epigastrium and sometimes to the right shoulder. Such disturbances of digestion may be continuous or are more likely to

occur at periods. Some patients are relieved by induced vomiting. Occasionally spontaneous vomiting occurs with relief, and occasionally some simple remedies, especially a carminative, seem to relieve the symptoms.

The Secretions of the Stomach in Gall Bladder Disease.—I have made an analysis of the conditions of sixty patients suffering from cholelithiasis to ascertain the secretions and motility of the stomach in this class of patients. These sixty patients have been selected out of three hundred and thirty-five patients, of whom I have histories, because in these sixty patients there were made careful observations of the digestive power of the stomach. Of these sixty patients fifty suffered from cholelithiasis with cholecystitis and ten suffered from cholecystitis with cholelithiasis of the gall bladder and the common duct.

The great majority of these patients presented practically a normal gastric juice. In a few instances the total acidity was high. In one 122; in two 112; in one 116. In a few the total acidity was low, practically an anacidity, with no more total acidity than would be expressed by the acid phosphates of a test meal. Of these one showed a total acidity of 9 and two of 10. All of the remainder showed an acidity within normal limits. An hyperchlorhydria as represented by a large amount of free HCl occurred in only a few. The record shows free HCl in one of 70; another 78, and two 88.

Motility was disturbed in forty-five of the sixty patients during acute exacerbations of the disease as shown by vomiting. A study of the motility of the stomach during intervals between paroxysms showed that there was practically never an anatomic insufficiency of the gastric muscle. The fasting stomach of the morning was invariably empty in every patient studied. In two patients the fasting stomach of the morning showed the presence of gastric juice without microscopic food remnants. In the same two patients a seven-hour motor meal showed the presence of gastric juice of a rather high acidity with a few food remnants. The remainder of the patients showed an entirely empty stomach with a seven-hour motor meal. The stools of these sixty patients showed an absence of chemical blood with two exceptions.

The analyses of the stomach condition of these sixty patients would seem to indicate that the digestive power of the stomach was not disturbed by cholecystitis excepting in the acute attack or in exacerbations of the chronic disease. During the acute attack or the exacerbation, the disturbance was due to the pain and was manifested by nausea, vomiting and usually anorexia.

Intestinal Function.—Constipation is the rule in cholecystitis and gallstone disease. With obstruction of the ducts and jaundice, there is the usual clay stool and fetor. Usually the absence of bile from the intestinal tract results in lessened intestinal peristalsis and the tendency to flatulence. There is also present in the stool a larger amount of free fat than in the normal condition because of the loss of the influence of the bile upon the digestive power of the succus enteritis and pancreatic juice.

Diagnosis.—The clinical course of gall bladder infections and cholelithiasis is quite uniform and a careful analysis of the symptoms and thorough investigation of the physical condition will usually enable one to make a diagnosis. Belly pain is a common condition. The nerve supply of the liver, gall bladder and ducts and the stomach, the appendix vermiformis and head of the colon is so nearly the same that pain alone or its location cannot be considered absolutely as a diagnostic point in the involvement of any of these structures. However, the pain of gall bladder infection and cystic duct involvement is usually located in the gall bladder region and is referred to the lower end of the sternum and epigastrium and often to the right scapular region. Furthermore, palpation upon the gall bladder region in this condition not only aggravates the local pain but especially intensifies the radiation to the ensiform appendix. Peritoneal adhesions between the gall bladder and surrounding structures may result from other conditions and cholecystitis, i. e., chronic ulcer of the duodenum and stomach. Recent adhesions are often painful and chronic ulcer of the duodenum or stomach with perigastric or periduodenal adhesions with the gall bladder and liver may result in pain very similar to that due to gall bladder infection or gallstones. Occasionally pressure upon an infected gall bladder radiates toward the appendix vermiformis. Nephritic colic may be accompanied with the radiation of pain into the gall bladder region. Appendicitis as you know, may be accompanied by a pain referred to any point in the belly outside of the appendix region. Occasionally the appendix may be so situated that it lies near the gall bladder and an appendix in that location may present symptoms difficult to differentiate from cholecystitis. No careful physician will forget that acute infection of the pleura and lung may result in reflected pain along the lower intercostals to the belly with rigidity of the abdominal muscle and abdominal tenderness; that gastric crises of especially the early stage of locomotor ataxia may be mistaken for gall bladder infection. This is not an uncommon mistake. In the last five years I have had in the Presbyterian Hospital ten patients suffering from gastric crises of locomotor ataxia who had been operated upon for cholelithiasis. Pott's disease of the dorsal spine with resulting pressure upon the posterior nerve roots results in abdominal pain with rigidity of muscles and tenderness. Chronic ulcer of the stomach and duodenum usually has a classical and typical clinical course. A careful study of the patient's history, a careful physical examination and a study of the stomach secretions and motility and stool with the further fact that pain of chronic ulcer is relieved by proper diet, will enable a diagnosis to be made.

In other words, while a diagnosis may not be definitely made in every patient suffering with cholecystitis, acute or chronic with or without gallstones, a sufficiently careful examination of each individual will enable one to differentiate this disease from practically all others of the abdomen.

GALLSTONE DISEASE AND ITS RELATION TO INTESTINAL OBSTRUCTION.*

JOHN B. MURPHY, M.D.

CHICAGO.

History.—Obstructions of the gastro-intestinal tract by gallstones may be divided into two distinct epochs: First, that which preceded the appearance of the monograph of Courvoisier in 1890; and, second, the period from 1890 to 1910. In the later years, surgery has been the dominant treatment of gallstone disease. Courvoisier's epoch-making article which included practically all recorded cases in the Christian era, gave a new impetus to surgical thought on the subject of cholelithiasis. His forceful presentation of the pathologic conditions of gallstones in the gall-bladder, cystic duct, common duct, intestine, peritoneal cavity, etc., showed that there was a great field for mechanical intervention in lesions resulting from cholelithiasis. Following this, in 1892, came the invention of the Murphy button, which was first devised for the relief of conditions that developed from cholelithiasis. This mechanical aid gave a new impetus to the surgical treatment of gallstone lesions. Preceding the invention of the button, there had been performed but eleven operations of cholecystenterostomy and forty-seven operations of cholecystectomy. There were twenty efforts at removal of stones from the cystic duct. Langenbuch, reported by Kuenmel, had done his first case of removal of gallstones from the common duct under a definite diagnosis; and altogether four cases of extirpation of gallstones from the common duct had then been performed and desultory cases of intrahepatic stone removals were reported where the operation was performed not on a definite diagnosis but for the treatment of abscesses. The hepatic duct had been opened in 1888 by Knowsley Thornton, and in 1889 by Kocher. Choledochostomy had been done in 1886 by Ahlfeld and choledochenterostomy attempted by Kocher. From this you will note that at the time of Courvoisier's publication the surgery of the gall-tracts was in its infancy. The surgery of obstruction to the bowel by gallstones had advanced further than the surgery of the biliary tracts themselves, as the stones produced lesions that immediately and greatly hazarded the life of the patient. Murchison collected up to that time 25 cases, Mossé 38, Lichtenstern 41, Béraud 13, and Courvoisier himself 131. The sex, age, etc., of 102 of Courvoisier's cases in which he was able to give these data are here analyzed:

	Male	Female	Total
20-30 years	..	1	1
30-40 years	1	4	5
40-50 years	3	9	12
50-60 years	6	15	21
60-70 years	7	14	21
70-80 years	6	11	17
80-90 years	..	2	2
?	8	15	23

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* Read before the Chicago Medical Society, April 20, 1910, in a symposium on the Gall-Bladder, Gall-Ducts and Liver.

In reviewing the statistics of abdominal surgery in 1890, after Senn had accomplished his master work in the abdomen, it seemed to me there was no other class of diseases left that offered so much for surgical attack as those of the biliary tract and liver. I therefore began, in 1890, experiments on dogs, and in 1892 perfected the button for gall-bladder and intestinal anastomosis.

The first case was operated on by me June 11, 1892, for an obstruction to the common duct by a large stone. The duct was surrounded by adhesions. A cholecystenterostomy was made. The patient made an uninterrupted recovery and I was able to keep track of her health for years after.

With the awakening of interest in surgery of the biliary tracts, one operation after another was quickly suggested, until to-day the surgery of this tract has reached a very high degree of perfection. In the specific relations of choleliths to intestinal obstruction, we can well analyze the pathologic lesions on the following basis:

1. The stones that pass through the wall of the gall-bladder into some portion of the intestinal tract.

2. The stones that pass through the wall of the cystic duct into the intestinal tract.

3. The stones that pass from the common duct by ulceration through its wall into the intestinal tract.

4. Stones that pass from the gall-bladder through the cystic and common ducts into the duodenum.

The rôle of gallstone in the intestinal tract represents the superlative degree of pathologic changes in the gallstone cycle. The points at which the gallstones produce obstruction in the intestinal tract can well be judged from Courvoisier's analysis of fifty-two cases, and we believe this represents the average position of arrest of the stones in the intestinal tract:

Duodenum	3	
Jejunum	4	
Upper jejunum	1	
	—	8
Upper ileum	4	
Middle ileum	1	
Ileum	18	
Lower ileum	10	
	—	33
Ileo-cecal valve.....	7	
Vermiform appendix	2	
	—	9
Sigmoid flexure	2	2
	—	52

These statistics of Courvoisier have an especial value as they show the clinical course in the cases preceding the era of frequent operations for gallstone diseases. They correspond fairly well with those of LeConte, Gibson, Lichtenstern, Moynihan, Woods, Porter and Murphy.

The positions of obstruction are very interesting. A lady 80 years of age had 22 stones in a diverticulum of the duodenum, which produced all sorts of digestive disturbances. In one patient there was an obstruc-

tion of the ileum by two stones not larger than a hazelnut, at the site of a malignant stricture. In two there were perforations of the appendix from impacted gallstones. In two others there were large conglomerate masses of choleliths in the intestine. In a case reported by Bermond there was a mass of stones as large as two fists, and in one by Puyroyer a mass as large as the fist of one hand. Of 125 cases, 70, after various and repeated colics, emesis, peritonitis, ileus, etc., were cured spontaneously by the passage of the stones per anum. From the analysis of the cases, it was impossible to tell with any degree of certainty how the majority of the stones came into the intestinal tract, as in those cured spontaneously it was not ascertained and in many of those on which a post-mortem was made it was not recorded. In 36 cases in which the report was accurately given, the stones were passed into the intestine through a gall-bladder-duodenal fistula, in 25 cases a gall-bladder, ileum fistula, in one a colon fistula, in one a duodenal and colon fistula, and in seven a choledochus and duodenal fistula.

The size of the stones that can pass into the common duct by the wedge-shaped dilatation may well be estimated from an analysis of these cases: In one, where the patient died after five days symptoms of ileus, the stone measured four inches in circumference; the choledochus had contracted down after its passage to the size of an index finger. In another the patient died after fourteen days of icterus from a cholesterol stone impacted in the ileum. In one a herniectomy was performed for an incarcerated hernia, but without symptoms of obstruction in that zone, and it was found that there was an enormous gallstone filling the intestinal lumen. The choledochus was as large as the stone. In one there was an obstruction with two large cholesterol stones at the ileocecal valve. In this case there was no evidence of perforation of the surface of the gall-bladder, but the duct was still large. Another patient who had had an arrest of half of a large gallstone, died suddenly a few days later and it was found the other half had become impacted in the intestinal canal, ulcerated through its wall and caused a perforative peritonitis. The choledochus was dilated to the size of the gall-bladder. In still another instance, the patient died on the seventeenth day of the ileus from diffuse suppurative peritonitis due to an ulceration of the gallstone through the tract. In one instance, a lady aged 67 years, suffered four days from ileus, laparotomy was performed, two large gallstones were removed from the small intestine but she died in twenty-four hours from the septic peritonitis.

It will be noted in all of these cases that the ileus terminated fatally a long time after the onset of the symptoms of intestinal obstruction. That is due to the fact that the patients were suffering from an *obturation ileus*, that the stones were constantly changing their position and therefore did not perforate, and further that with obturation ileus the patient survives a much longer period of time than with strangulation ileus, notwithstanding that in both there is a complete retention of the material above the point of obturation. While a great majority of stones of large size find their way into the intestinal tract through ulceration of the gall-bladder, very large stones can and have been admitted through

the common duct. One of these large stones was encountered in the common duct of a doctor from Vancouver. It was one of the largest stones I have ever observed. It measured $1\frac{7}{8}$ inches in length and $1\frac{1}{8}$ inches in diameter. It came into the duct without a colic and was well on to the ampulla of Vater at the time it was removed. Its enormous size prevented the spasm of the duct, colic, that is usually present when small stones are passed. This case shows one of the exceptions to our law that "jaundice of any considerable duration not preceded or accompanied by a colic is not a gall-stone jaundice."

The intestinal obstruction by the stone itself may be analyzed as follows: The ileus due to gall-stone which has perforated through the gall-bladder into the intestine may have no preceding jaundice but the inflammatory symptoms which accompany such a perforation ought to suggest the diagnosis. There may have been colicky pains preceding the perforation by the stone while it was impacted in the neck of the gall-bladder but there is no colicky pain while the stone is in the fundus of the gall-bladder itself. If an ileus develops after an attack of colic or a prolonged colicky jaundice in women of middle age, the possibility of gallstones should be considered. If the stone perforates into the colon it causes few, if any symptoms, while when it perforates into the small intestine the characteristic attacks of ileus are produced and these may be repeated for months or years, depending on the advancement of the stone or arrest in diverticula in the intestinal tract. It may result finally in the escape of the stone into the large intestine, its ulceration through the wall of the intestine with perforation, peritonitis, etc. The arrests are more common a few inches above the ileo-cecal than in the ileo-cecal valve itself, as in the former position the lumen of the small intestine is less than at the ileo-cecal valve.

Symptoms.—While the early writers considered that a previous history of gallstones was present in only about 20 per cent. of the cases, they included only syndrome symptoms: pain, nausea and vomiting and icterus. In our observation icterus was present in only 14 per cent. of all of our cases operated on for gallstones, but other clinical evidence of gallstone disease was pronounced and clean-cut in the enormous percentage of them, so that the symptoms and signs of gallstone disease without jaundice will now be recognized as a part of the previous history of all cases of cholelithic obstruction.

In the use of the word ileus, we include not a pathologic entity but a syndrome of symptoms consisting of pain, nausea and vomiting, tympany, and coprostasis, one or the other of these accentuated in different degrees in individual cases. These symptoms may or may not be due to mechanical obstruction.

Intestinal obstruction may be defined as a complete or partial obstruction to the onward movement of the bowel contents, which obstruction is of *mechanic* origin. *Ileus* includes the stasis of the intestinal contents from excessive muscular contraction of the wall, *dynamic*, or paralysis of the peristaltic wave from any cause, *adynamic* or *mechanical* obstacles to the advancement of the fecal current, *mechanic*.

Obstruction may be unassociated with strangulation and this is the common condition in gallstone ileus, in intestinal polyps, enterolith, etc. Strangulation ileus involves not only the suspension of transmission of the intestinal content but a suspension or retardation of the circulation in the bowel segment. Strangulation ileus is a much more rapidly fatal condition than obturation ileus. In the recent investigations of the cause of deaths from ileus, efforts have been made to show that it is the absorption of the material retained above the point of obstruction that is the most potent factor in producing death. If this were true, complete obturation and strangulation ileus should terminate fatally in about the same period of time, which is not at all in consonance with clinical experience. There is some other element than the element of absorption of the intestinal contents. Whether that is the infection of the vascular system in the strangulation zone and when freed causes such a speedy and rapid collapse or some nerve phenomena, remains for the investigator of the future to determine. In a single case of gallstones we may have the three varieties of ileus:

1. The adynamic variety, while the stone is passing through the neck of the gall-bladder, cystic duct and common duct.
2. The dynamic variety, where a small stone produces a spasm of the intestinal wall with all of the symptoms of ileus and where the stone is much smaller than the lumen of the intestine, as reported by Courvoisier.
3. The mechanic variety, where the stone is large enough to completely occlude the lumen of the bowel and arrest the fecal current.

Symptoms of Intestinal Obstruction in Connection with Cholelithiasis.

—The clinical history will show symptoms of pre-existing cholecystic disturbances, either colics and cholecystitis, or cholecystitis, colics and jaundice. These may have existed for a number of years preceding the intestinal obstruction. The intestine may be obstructed through adhesions or flexions of the intestinal tract produced by paracholecystitis. Volvulus and incarcerations may also occur as a result of gall-stones. The symptoms of the mechanical occlusion of the intestine are:

Pain, always of the colicky character. The spasm or colicky waves decrease in frequency after the first twenty-four hours. They may be re-excited after the muscle wall has become fatigued by long efforts at expulsion of the foreign body; by kneading or percussing the abdominal wall. The abdomen is not very sensitive to slow pressure in the early stage.

Emesis.—The appearance of the vomitus when the stone is high up is of the gastric and biliary type. When lower down it may take on the fecal color but rarely ever takes the typical fecal odor. The vomiting increases in frequency as the hours of the attack increase, until the stone either ceases to advance by becoming arrested in a diverticulum or escapes to a place where the intestinal content can pass by it. The quantity of emesis is less the nearer the stone to the pylorus. The great bulk of the material is made up of the transudation into the intestinal tract above the point of obstruction. It is not due to reversed peristalsis

but to the accumulated products of secretion and alimentation above the obstructing body. With the contraction of the intestinal wall the material cannot advance downward and must find its escape at the upper and only outlet. It therefore is forced back into the stomach and is ejected. In the beginning it is associated with nausea. As the case advances it becomes projectile; later it may become a mere gulp and flood over the patient's entire face. The vomitus is rarely ever fecal, that is, having the distinct odor of feces.

Borborygmus, peristalsis.—It is of the periodic type or wave. It usually begins some distance from the point of obstruction, increases as it approximates the point of obstruction and terminates in a loud explosion. The explosive point indicates the zone of obstruction. The stetho-

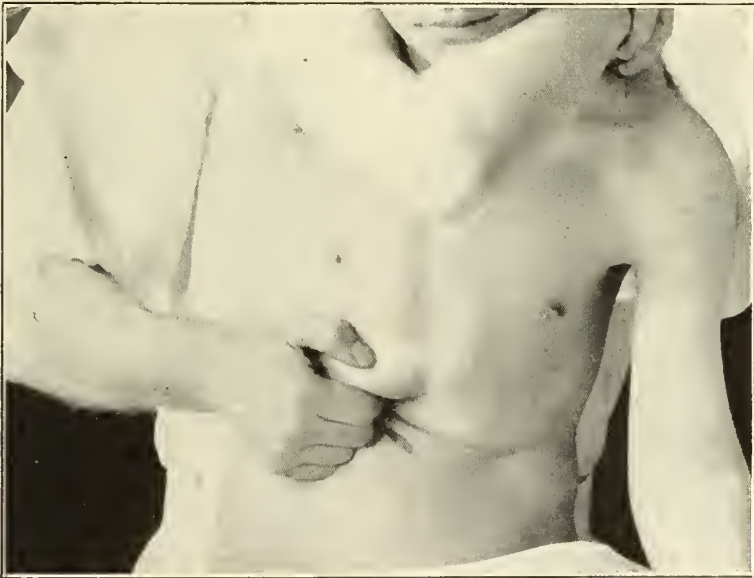


Fig. 1.—Shows the surgeon's hands hooked under the costal arch, to determine the sensitiveness of the gall-bladder. The patient cannot inspire against this pressure with an acutely inflamed or distended gall-bladder.—Murphy.

scope gives very valuable information in intestinal obstruction. A dose of morphin suspends the peristaltic waves from 6 to 8 hours and thus destroys one of the best aids to diagnosis.

Tympany.—This may be local or general: local, and in the upper abdominal region when the duodenum or upper jejunum is the site of obstruction; general, when the calculus is in the ileum or at the ileo-cecal valve. Circumscribed areas of flatness can frequently be discerned. They are due to accumulations of fluid above the point of obstruction. Their relations to definite obstructions were outlined by von Zoege Manteufel. Recurrent attacks of obstruction in these cases often develop great dilatation of the bowel above the obstructed zone.

Coprostasis forms the key stone of the arch of symptoms of intestinal obstruction. In obturation ileus small quantities of feces may be passed from time to time and even a little gas. Both of them are misleading and lure the physician on in the hope that the ileus is of some other than the mechanic type, until perforation or other dangerous complications occur. The possibility of erroneously interpreting these signs should be borne in mind.

Temperance.—With mechanic obstruction of the intestine there is practically never an elevation of temperance in the first forty to sixty hours. Later, when gangrene and perforation have taken place temperature may appear. This absence of temperature is very valuable in differentiating mechanic obstruction from the infective lesions within the abdominal cavity.

Leukocytosis is, as a rule, only moderately increased. We have seen, however, a 36,000 leukocyte count in a case of mechanic ileus.



Fig. 2.—Shows the hand elevated, with the middle finger flexed perpendicularly at the tip of the ninth costal cartilage.—Murphy.



Fig. 3.—Shows the finger struck with the right hand when the patient is in deep inspiration. This causes great pain if the gall-bladder is distended or inflamed.—Murphy.

Differential diagnosis, will have to be made from, first, gallstone obstruction of the neck of the gall-bladder, cystic or common ducts. Second, from acute pancreatitis, infective, hemorrhagic and fat necrosis. This is the most difficult set from which to differentiate. The elevation of temperature, however, with the great sensitiveness in the abdominal cavity to pressure under the costal arch (Fig. 1) and perpendicular percussion (Figs. 2 and 3—Murphy) and the early collapse are valuable aids. Third, from tabetic crises. Fourth, from perforative peritonitis. Fifth, from appendicitis. Sixth, from acute renal lesions: (a) metastatic infarcts (hematogenous infection), (b) obstructions in the pelvis, (c) obstructions to the ureters. These acute kidney lesions give evidence of great pain on heavy fist percussion (Figs. 4 and 5—Murphy) over the

diseased kidney. The presence of blood in the urine, microscopically, will aid in the differentiation. Seventh, embolism of the mesenteric artery or thrombosis of the portal vein gives a train of symptoms so closely resembling those of acute mechanic obstruction, that pre-operative differential diagnosis is rarely made. Eighth, torsion of a tumor pedicle gives the pronounced symptoms of ileus but the presence of the tumor aids one in the diagnosis. Ninth, fecal impaction may be of the recurrent obturation type and only through the recognition of the fecal mass by palpation or proctoscopy with mega sigmoid or mega colon can it be differentiated.

Operation.—As many of the conditions mentioned above are of themselves surgical lesions, demanding immediate surgical treatment, the importance of differentiation is not so great as far as the life of the patient is concerned. These cases should be operated on at the earliest possible moment before there is time for perforations, peri-intestinal adhesions,



Fig. 4.—Shows the palm of the left hand pressed firmly over the right renal zone and the right elevated to make the stroke.—Murphy.

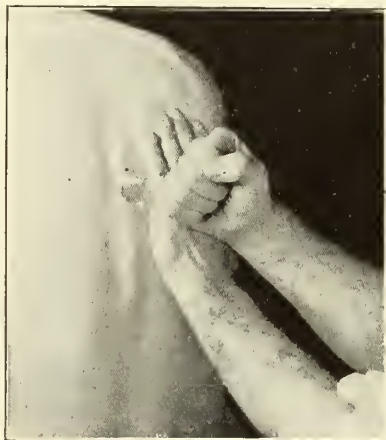


Fig. 5.—The stroke completed. When the kidney is actually inflamed, the pelvis distended or the ureters obstructed, there is great pain elicited by this blow; if the lesion is in the appendix or in the gall-bladder there is no pain produced.—Murphy.

intra-abdominal abscesses or acute intestinal obstructive collapse, a condition from which the patient rarely ever rallies. Delay in operating for intestinal obstruction is more fatal than delay in any other abdominal lesion, except acute gastro-intestinal perforations into the free peritoneal cavity. A free gastric lavage should be given immediately before operation. Local or general anesthetic may be used, both sparingly.

Location of incision. The incision should be made through either the right or left rectus muscle, over the point of greatest sensitiveness and the location of peristaltic explosion.

When the abdomen is opened, if all of the presenting coils are greatly distended, the hand should be passed into the pelvis to grasp the collapsed ileum as near the ileo-cecal valve as possible. This should be

rapidly run through the fingers in an upward direction, the assistant returning the coils into the peritoneum as rapidly as they are passed. When the dilated fixed point is reached, great care should be exercised not to tear the intestine where its wall is weakened by necrosis or ulceration from pressure by the calculus. If the wall is in fairly good condition it should be divided transversely and the calculus removed. The intestine should be closed by a double Lembert suture, thus turning into the lumen the fold that was most damaged by pressure from the calculus. In looking for points of obstruction, when the abdomen is opened there are dangers of missing the obstructions in the peri-duodenal sub-peritoneal pockets, diaphragmatic hernia, pericecal pockets and retro-sigmoidal peritoneal diverticula. When the nutrition of the intestinal wall has been materially interfered with a resection of the bowel should be made and a goodly area of the bowel be removed. Many post-operative perforations have been due to the fact that too little of the infiltrated and damaged bowel above the point of obstruction was excised.

In the small intestine, the end to end operation is the one of choice, but when the wall is damaged, side to side or end to side by suture or oblong button gives the best results. Immediately after the laparotomy if the patient is materially depressed or collapsed an intravenous injection of 1.5 to 2 pints of salt solution should be administered before he leaves the table.

Many intestinal cases die cured of the obstruction, i. e., the collapse continues to a fatal termination a few hours after the operation. The exact cause of this collapse is unknown. It never occurs with patients operated on within a few hours after the onset of symptoms, not even when a number of feet of the intestine is resected. Cardiac, nerve or vaso-motor stimulants, with the possible exception of intra-venous injections of adrenalin, have little or no effect on these cases. Drainage is rarely ever indicated. Proctoclysis should be instituted as soon as the patient is returned to bed and a pint and a half of normal salt solution administered every two hours for 24 to 48 hours. Six to 8 ounces of solution has little or no value and the practice is not to be recommended. Anodynes are rarely ever indicated after operation. Heroin is the best where one is necessary.

THE LIMITATIONS OF SURGERY IN CHOLELITHIASIS.*

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Operations as performed at the present time on account of cholelithiasis are usually successful as far as the primary mortality is concerned. Sepsis and hemorrhage have no greater terrors for the surgeon in this field than in most other fields of surgery. Only under special difficulties does hemorrhage threaten the success of the operation, namely, in the

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case of patients who are severely jaundiced at the time of the operation. In these cases the hemorrhage at the time of the operation is supposed to be liable to be excessive, but my personal experience has not enabled me to confirm this teaching. Jaundice is also reported to favor secondary hemorrhage at a time more or less remote from the operation, but with the exception of one slight hemorrhage of this kind from a drained gall bladder, which was easily stopped by the application of adrenalin, I cannot report any such accident from my own experience.

Prolonged and severe vomiting of hemorrhagic stomach contents has in some cases in the literature led to the *exitus lethalis*, but as we have come to understand this condition better, it has lost much of its terror. The condition at times closely resembles that which is known as arterio-mesenterial occlusion or acute dilatation of the stomach. The resemblance lies particularly in the character of the vomited material and the persistence of the vomiting. Sometimes after gallstone operations we undoubtedly have to deal with real arterio-mesenterial occlusion such as is liable to follow a great variety of operations or may occur without any operation. These cases are treated with very satisfactory success by the postural method of turning the patient on the abdomen or raising the foot end of the bed to a considerable degree and by the stomach pump. But in a number of cases which I have observed, the clinical picture differed from that of arterio-mesenterial occlusion by two easily noted facts; first the absence of the dilatation of the stomach and second, the amount of the vomited material. Nobody who has ever seen any cases of true arterio-mesenterial occlusion will forget the surprising quantities of blackish fluid that pour out of these patients, nor is the distention of the stomach easily overlooked, if the examination is conducted at all properly. Some cases which I have observed after gallstone operations have been distinguished by the absence of these two cardinal symptoms of true arterio-mesenterial occlusion, though they presented persistent vomiting of blackish fluid. I believe that a number of these cases, none of which in my experience have ended fatally, have to be explained on a different pathologic basis from that of arterio-mesenterial occlusion. In the early days packing was resorted to to a considerably greater amount than is practiced at present and this large amount of foreign material placed in the abdominal cavity between stomach and duodenum on one side and the liver on the other could not, I believe, fail to compress the portal vein and some of its radicles to a serious degree. I am supported in this belief by two observations: first, that the vomiting always stopped completely and without further treatment as soon as the packing was removed and second, that since we use only very small amounts of packing, if any, this vomiting has become very much less frequent and less serious in its nature.

In case of cholelithiasis where the liver has been damaged to any extent by the chronic disease, the anesthetic is a very serious menace to the patient's life. Recent extensive investigations of Offergeld have shown again that the liver undergoes very intense pathologic changes, particularly fatty degeneration, after administration of ether or chloro-

form. Gas is decidedly less dangerous though the relaxation of the abdominal walls, which is so desirable for operations on the deeper bile ducts, is not always easily achieved under gas. Local anesthesia is of limited usefulness in this class of cases. Though it is perfectly feasible to incise the abdominal walls without producing pain, it becomes progressively more difficult to operate under local anesthesia the deeper the field of operation is located and the more it is necessary to handle or stretch those organs which are sensitive to pain. We know that the parietal peritoneum, the under surface of the liver and particularly the lesser omentum are very sensitive to manipulation and this excludes the use of local anesthesia just for the class of cases where it would be most desirable. The use of morphin scopolamin in conjunction with ether has proved very satisfactory in my experience, as considerable parts of the operation can be done without ether and, when ether becomes necessary, it is needed in only small quantities.

An operation may be entirely successful as far as the patient's life is concerned and yet the final outcome may be unsatisfactory. The limitations of complete surgical success are caused by general or local conditions. I shall not discuss here the more or less irreparable damage to the liver and pancreas and will only refer to one condition which is interesting to the surgeon in several respects, chronic morphinism.

Chronic morphinism is very liable to be produced by the oft-repeated administration of morphin during the course of gallstone disease. The removal of the stones does not always cure the morphinism though in many cases it is the only cure for this curse. I know one woman who now, ten years after the removal of her gall bladder, with the stones, is still a confirmed morphin eater and is thereby incapacitated for a useful life. It is important for the surgeon to know that and to what extent the patient has had morphin before the operation, because if he uses scopolamin morphin he will find a much larger dose of the morphin necessary than usual. On the other hand the case of the patient with chronic gallstone disease and morphinism demonstrates that morphin is a very safe anesthetic to use in gallstone operations.

Complete success of operations for cholelithiasis is jeopardized from three directions, which may be shortly characterized as: 1, the stones; 2, the infection; 3, the organs which are the seat of the disease.

Gallstone surgery unfortunately has not been able to profit from Roentgen's great discovery as much as the surgery of other concretions. The diagnosis of the seat of the stones can often be made very accurately from the symptoms, but this method of diagnosis is not infallible and must be supplemented by the examination of the ducts during the operation. The careful investigation of the entire system of bile-ducts is of paramount importance in every operation undertaken for the cure of cholelithiasis, even if the symptoms of the patient seem to point with great distinctness towards one and only one part of the bile ducts. The difficulties of this search for stones constitute one of the main limitations of surgery in this field. It is, of course, easy enough to clean a gall bladder of all stones which are floating in it, but often and much more

often than is commonly believed, gallstones are located in the wall of the gall bladder, particularly in those diverticula which I presented in microscopical pictures before this society some time ago. The difficulty of detecting gallstones increases with the distance from the tip of the gall bladder. The cystic duct has so many folds in its mucosa that it is very easy for a stone to remain undiscovered behind these, especially as probing the cystic duct is a very unsatisfactory procedure, almost impossible in ducts which are at all normal and only moderately successful in much distended ducts. The common duct and the hepatic ducts are lined with a very smooth membrane which has practically no folds and stones can not easily be retained there in folds of the mucosa. But there is no reliable way of finding stones in the intrahepatic bile-ducts. Undoubtedly they are of great rarity and this is fortunate for the surgeon, because no amount of probing or flushing of the ducts can lead to certainty as to presence or absence of intrahepatic calculi.

The larger the stone the greater the certainty of finding it whether it be in the gall bladder, the cystic duct or in any part of the hepatic and common ducts. But where we have to deal with those numerous small black or brown grains of gallstones, it is very hard to make absolutely sure that none of them have escaped us. It was for this class of cases particularly that Kehr recommended his method of sweeping out the common duct, which consists in introducing a strip of gauze through an incision in the common duct and bringing it out through the papilla in the incised duodenum. But Kehr himself has had the chagrin of having to reoperate on such a case for a stone which had not been removed in the first operation.

In cases of numerous and small stones the danger that diverticula in the gall bladder or folds of the cystic duct continue to shelter small calculi is very considerable. The best preventative of stones remaining behind in these organs is their removal by complete cholecystectomy. This is the reason why cholecystectomy continues to increase in favor among the most thorough gallstone surgeons. No amount of drainage of the gall bladder can guarantee that such a stone come out of its hiding place and float out. Electric illumination and even flushing the ducts are entirely unreliable.

If a stone should be left behind in any part of the bile system, that stone would be liable to lead to a recurrence of the symptoms. This kind of recurrence is a false recurrence, which means an incomplete operation. If in a second operation a single stone is removed and this stone has facettes, that fact would be logical evidence of its having been overlooked in the first operation. If in a second operation a stone should be found which is egg-shaped or round, it might have been overlooked in the first operation or it might be new-formed. The latter verdict would have to be passed also, if multiple facettted stones are found in a second operation.

We can speak of true recurrence only when all possibilities of the stone having been overlooked in the first operation can be fairly excluded. These true recurrences are undoubtedly rare and in this respect gallstone

disease reminds one of the immunity which one attack of typhoid produces. The fact that typhoid has been found the precursor of gallstone disease in as many as 33 per cent. of the cases is of further significance.

There is another kind of recurrence which is directly due to the operation and which has been observed in a few instances. This is the so-called thread recurrence, that is to say, a new formation of gallstone around some non-absorbable suture left in the bile-ducts. As the use of silk is dwindling the danger of such artificial recurrence is very slight. It is worth remembering, however, that heavily chromicized catgut at times lasts so long, that this danger of stone formation around the thread should forbid its use for suture of the bile-ducts.

Gallstone disease in its modern accepted meaning includes infection of the bile-ducts by one or more kinds of micro-organisms. It is surprising to see how bile-ducts full of pus will clean up in the short time of a few days or weeks, as soon as drainage of the bile to the outer world is provided for. Abscess in the neighborhood of the gall bladder, sometimes extending from the liver to the stomach and duodenum and large enough to contain a pint of pus or more, often containing numbers of gallstones, heal usually without difficulty when opened and drained. Abscess of the liver, if discovered, offers a fairly successful field for the surgeon. Nor is it the large abscess, intrahepatic or extrahepatic, which sets limits to the surgeon's success, but it is the smaller and multiple abscesses which after infection of the gall bladder have formed as metastases along the ramifications of the portal vein in the liver. These multiple and small abscesses may cause chronic disease or even death sooner or later, even after most careful and prolonged drainage of the bile system.

Whatever drainage may be able to do for the cure of an established infection of the bile system, it cannot be expected to prevent recurrence of the infection after the drainage opening has closed. And it can hardly be called a limitation of the surgery of the disease that it cannot prevent recurrence of the infection. As a matter of fact recurrence of infection, even without recurrence of gallstone formation, cannot be said to be at all frequent. Those infections at least which lead to formation of gallstones, appear to be practically prevented by the above-mentioned gallstone immunity and the same immunity appears to exist to a considerable degree with regard to any infection of the bile system subsequent to operative removal of the stones.

The organs which are the seats of gallstone disease though fairly well protected against true recurrence of stones and against recurrence of infection, are by no means always in a perfectly healthy condition as a result of the operation. In fact the very nature of the operations must produce or is liable to produce conditions which limit the success of the operation.

The long continued presence of stones and infection in the bile-ducts causes pathologic changes which are not easily eradicated.

Adhesions are a frequent finding in operations for cholelithiasis and though they may be broken up thoroughly in the course of the operation, it is impossible to say that they will not reform. Undoubtedly in many

cases these adhesions are the cause of various digestive disturbances continuing after operations. The greater the amount of adhesions broken up in the operation, the greater the amount of foreign bodies remaining as packing, etc., after the operation, the greater the chances for the formation of new adhesions. In this respect as well as in one to be mentioned later, I consider it of decided advantage to allow the patients to assume the sitting position. In fact we place our cases always in the sitting position immediately after the operation. If the patient is placed on his back horizontally with or without packing or a drain in the wound, the liver will have a tendency to rotate backwards and a large gap can form between the under-surface of the liver and mesocolon transversum and colon which may fill with serum, blood or clots and give rise subsequently to a considerable amount of new-formed connective tissue, which would appear as extensive and thick adhesions between these organs. If, on the contrary, the patient is sitting up, the under-surface of the liver has a decided direction downward and forward and is falling directly over the lesser omentum and the mesocolon. The escape of any fluid from the under-surface of the liver is in the most natural direction, downwards, and adhesions, though they will form here also, will be much thinner and more easily broken up afterwards, as all peritoneal adhesions tend to be broken up after the extinction of infection. But in many cases of chronic disease preceding the operation the adhesions have caused very serious disturbances in the normal relations of neighboring organs which the operation cannot remedy and the consequences of which limit the success of the operation.

The joy of a successfully performed operation is sometimes clouded by the occurrence of hernia in the scar of the incision. These hernias were of much more serious import in the days when the rectus muscle was cut transversely for the purpose of operations on the bile-ducts. This incision being no longer practiced, we rarely obtain a chance of observing very extensive hernias, but it certainly cannot be called an unlimited success if the patient emerges from the gall-stone operation with a hernia the size of a head, the surgical cure of which is sometimes by no means easy. However, hernias occur also after incisions of more approved pattern. The lower the incision is made, the longer it is kept open, the more it becomes infected, the more certain is the occurrence of a large and uncomfortable hernia. Where there is no infection of the wound, where there is only a small amount of packing or drainage and that removed early and particularly if the incision is made high up, the chances for the occurrence of a hernia are very much more limited. As in the upright position of the body the anterior surface of the liver tends to come downwards and forwards, we advise our patients to sit up early and as much as possible after gallstone operations. The anterior surface of the liver then tends to act as an obstruction of the opening in the abdominal wall. The importance of this action of the liver is further demonstrated by the fact that incisions close to the border of the ribs or between the ensiform and the border of the ribs hardly ever lead to hernia formation.

The operations on the bile-ducts themselves are liable to produce more or less undesirable after-effects by themselves and the proper choice of operation for a given case is of the utmost importance for a perfect result.

Cholecystendysis, the incision of the gall bladder with removal of stone or stones from the gall bladder and immediate suture of bladder was called the ideal operation. But as it excludes the treatment of the infection by drainage it is now used in only a very limited number of cases.

Cholecystostomy, the operation of draining the gall bladder, is a very safe operation with a very low mortality. It affords ready drainage of the bile tract. It does not guarantee complete removal of the stones in the gall bladder. The communication made between gall bladder and the surface of the body is liable to remain open for various reasons, the two most important being a stone overlooked in the cystic or common duct and faulty attachment of the gall bladder. These fistulas sometimes cause considerable trouble, first, because of the escape of the bile to the outside, which means the loss of the function of the bile in the intestine, and second, because of the constant necessity of dressings which keep the patient wet and uncomfortable.

Cholecystectomy, if done with removal of the cystic duct, protects very well against future development of stones in the gall bladder and cystic duct. It necessarily leads to more or less adhesions on the under-surface of the liver over the more or less exposed bed of the gall bladder. It also has been stated that if at any time subsequent to the cholecystectomy the common duct should become hopelessly obstructed by stricture or neoplasm, it would be impossible to make a satisfactory connection between the bile ducts and the intestine if there was no gall bladder to be utilized for a cholecystenterostomosis. In this respect, however, the experience of recent years has demonstrated first, that after removal of the gall bladder the common duct dilates to a considerable extent, second, that such dilated common ducts can be utilized successfully for anastomosis with the duodenum and third, that resection and suture of the common duct is perfectly feasible. In only two cases which I know of patients have complained after cholecystectomy that they had an almost constant bitter taste in the mouth, though no other symptoms of gall-stone disease were present.

The anastomosing operations between gall bladder and any part of the bowel from the stomach down to the colon are sometimes unavoidable. They are the more liable to result in infection of the gall bladder the further away from the stomach the anastomosis is made. The duodenum is almost always the point to which to anastomose the gall bladder. But the stomach has also been used with good success and it is surprising to find that the presence of bile in the stomach does not seem to affect the patients at all unfavorably.

Choledochostomy, the operation of incision and drainage of the common duct, at present is pretty generally preferred to choledochotomy with suture. Even long incisions in the common duct usually heal well

in a few weeks if only the common duct has free communication with the duodenum. Drainage of the whole bile tract is certainly accomplished most successfully through the common duct.

In summing up, we may say that the technical part of the surgery of cholelithiasis has reached a very high and satisfactory stage of development and that the limitations of surgical success are few, and those due more to pathological conditions preceding the operation than to any shortcomings of the art of surgery.

100 State Street.

GALL-TRACT INFECTION.*

J. E. COLEMAN, M.D.
CANTON, ILL.

Gall-tract infection is primarily a medical disease. If the family practitioner fails to diagnose and cure it, it then becomes a surgical disease.

After the surgeon operates the patient should again be returned to the family doctor and by his skillful management alone can health be restored. The general practitioner should be very alert to the possibility of gall tract tenderness and infection while treating any of the germinal conditions. The organisms most frequently found are the colon bacillus, the typhoid bacillus and the ordinary pyogenic cocci. Harris has secured pure typhoid cultures from the gall bladder eighteen years after the patient has had the fever.

The famous case of Mary Mellon is known to you all. When the gall bladder becomes infected it may persist simply as a chronic cholecystitis for an indefinite time, without the formation of gallstones. However, the stones may form quite rapidly and grow to considerable size, and when once formed they tend to perpetuate the chronic inflammation.

Gallstones are always due to an infection of the gall bladder or the gall tract. When we remember that it has been estimated that one person out of every thirteen has gallstones the importance to the general practitioner of gall-tract infection becomes at once apparent. Gallstones may be produced experimentally by inoculating the gall bladder with micro-organisms, but they must be of an attenuated virulence.

Gallstone formation is therefore seldom produced by severe acute infection of the gall-tract, but by an infection of a mild and chronic type. This accounts for the multitude of cases found post-mortem which the general practitioner has never suspected, and whose symptoms have been passed over under the head of chronic dyspepsia.

Not only must there be micro-organism present to produce the inflammatory changes, but such other factors as shall produce stagnation of the bile, or its delayed escape, so that the germs may have time to develop and to acquire lodgment in the mucosa. The growth of the germs causes

* Read at the Sixtieth Annual Meeting of the Illinois State Medical Society, at Danville, May, 1910.

a change in the reaction of the bile, and the cholesterin, the chief constituent of the majority of gall stones is precipitated or crystallized about detached masses of epithelial cells or masses of bacteria, products of inflammation which act as nuclei for the formation of stones.

Gallstones are therefore a secondary or accidental condition due to the chief or primary condition, gall-tract infection. Such being the case it is the duty of the general practitioner to diagnose these cases early, and to refer them to a competent surgeon, that they may be operated on during the period of safety.

Gallstones by migrating along the ducts may cause serious complications. The most noteworthy is gallstone colic. The colic, however, may be produced by masses of mucus or debris being forced along the inflamed tracts, and the general practitioner should always so state to the patient. The patient should be told that the gall-tract infection will eventually lead to the formation of gallstones, so that if stones are not found he will understand that a necessary operation has been done, and that he is saved from the more dangerous one when stones are present.

Stones may lodge in the cystic duct, causing obstruction with empyema of the gall bladder. They may lodge in the common duct, producing jaundice and bile in the urine. When infection extends through the wall of the gall bladder or of the ducts adhesions form to the adjoining structures, to the colon, to the duodenum, to the stomach, to the omentum, to the liver and to the abdominal walls. These adhesions give rise to other symptoms, depending upon the particular organ or organs involved, and to the extent to which their functions are interfered with.

A characteristic feature of the symptoms of all these conditions is their discontinuity, viz: attacks and remissions. The longer the conditions persist the more likely we are to find pericystic adhesions, complications from migrations of stones, etc.

When there is suspicion of gall-tract infection, one should have all his life habits carefully regulated, as all conditions favoring stagnation of bile favor infection, and should be done away with, such as sedentary occupations, lack of exercise, depressing mental emotions.

The chief etiologic cause, however, is a depressed circulation associated with catarrhal duodenitis. In cholecystitis, with or without gall stones, the normal rugosity of the mucous membrane has been found partly or completely obliterated, the mucosa and submucosa filled with acinous masses, the muscular tissue greatly hypertrophied. The blood vessels and the lymph vessels are more numerous and show marked thickening with sclerosis of the walls. When the process is due to extension from the pars duodenalis the mucous membrane has been found swollen and a plug of inspissated mucus filling the diverticulum of Vater, completely obstructing the outflow of bile, causing jaundice, and this may occur without gall stones.

In empyema of the gall bladder the organ sometimes contains a pint or more of pus. In phlegmonous cholecystitis, which is fortunately rare, there is usually rupture with peritonitis and a fatal outcome. In cases not properly treated the condition goes on from bad to worse. Adhesions

to surrounding parts sometimes make operation impossible. Xanthematous masses appear. Sometimes the gall bladder atrophies until no larger than a pea. Cases are on record where it has enlarged until it sunk into the pelvis. Occasionally ulceration and fistulous tracts appear. I have seen one case where a gallstone worked out of an opening in the groin. In this case the diagnosis had not been made by the physician in charge of the case.

In acute infection cholecystitis the gall bladder is usually tense and distended, its contents usually dark in color, mucopurulent, purulent or hemorrhagic, and there may be a very foul odor. The cystic duct is often found closed even when there is no stone. The end results of infection recently reported by Bayard Holmes and Robert Babcock is brown atrophy of the heart with arteriosclerosis, first central, then peripheral.

The symptoms noticed, aside from tenderness over the gall tract are often those of dyspeptic nature, with uneasy feelings in the region of the liver, and pains in the back and limbs. Often a full feeling is noticed in the abdomen, then the patient gradually becomes jaundiced. Attacks of colic may come on attended by profuse sweating, nausea and vomiting and a tendency to faintness. The heart action in all these cases is weak. After the attack there is great soreness over the bile tracts until the acute symptoms subside. If the condition goes on to the formation of stones, the patient is constantly more or less miserable.

John B. Deaver, in his late address, remarks: "It is a common statement of the text-books, that most cases of gallstones give no symptoms, and that many cases are found post-mortem which could not be diagnosed in life. I believe that both these statements are incorrect. It would be entirely true for us to say, that in most instances gallstones do not manifest themselves by the symptoms which are commonly supposed to be the only ones which denote their presence, yet many a case of chronic dyspepsia, flatulence, anorexia, etc., is found in the end to be "latent" or "symptomless" biliary calculi. I find in looking over my case histories that this is the story time and again; that the patients have led lives of misery while the cause of their sufferings was unrecognized. Not only does early diagnosis relieve the patient of great distress and suffering, but it enables us to deal with those cases without being hindered by those complications and pathologic changes which invariably arise in cases of long standing."

After such warning we should be very careful in making an early diagnosis. Patients with slow pulse and arrhythmia should be examined with this end in view. Cases of sweating of some local part of the body as one hand, one side of the face, etc., very often have a cholecystitis for their origin, and finally all cases of dyspepsia should be carefully gone over with the object of discovering if gall tract infection may not be a factor in the diagnosis.

The essential factor in the treatment consists, first, in the free drainage of the gall tracts by a competent operator, and none other should attempt these cases. The operation of cholecystostomy is sufficient when

disease is limited to the gall bladder. When stones are present, they should be removed. When complications are present they should be dealt with and adhesions should be freed. When the gall bladder is so badly damaged that complete *restitutio ad integrum* does not seem likely to occur, it should be removed. It should also be removed when the cystic duct is permanently occluded. Stones in the common or hepatic duct should be removed with tubular drainage of these ducts, and drainage in all cases should be maintained until the bile flows clear and sterile.

The mortality increases in direct proportion to the complications present. It is least in simple cholecystostomy, and greatest in common duct stones with active infection of the tracts present, which is another indication in favor of early operations before complications arise. When the surgeon is done with the patient he should return him to the practitioner after telling him that he will need careful treatment for many months.

All stomach ailments should be removed. The mouth and teeth should be cared for and the patient taught to properly masticate the food. The flow of bile should be watched for in the stools and it must not be allowed to stagnate. Constipation must be removed; sedentary patients be made to exercise. The stooping habit, which many of these patients have, must be prohibited. When a feeling of fullness or discomfort is felt in the region of the liver, then purgatives should be used. All care must be taken to restore the normal tone of the heart.

REPORT OF TWO CASES OF ACUTE PERFORATING GASTRIC ULCER REQUIRING GASTROJEJUNOSTOMY AS A SECONDARY OPERATION—RECOVERY.

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ROCKFORD, ILL.

Acute perforation of the stomach is such a disastrous complication of gastric ulcer that a report of such cases with recovery is a matter of considerable surgical interest.

My first case has been previously reported¹ but I again present it here for the purpose of adding some interesting data to the subsequent history. The first report is as follows:

CASE 1.—H. W. G., a male, aged 62 years. In November, 1907, began to have distress in stomach with slight pain after taking food. In December had dizzy spells and very sour eructations. December 26 had a severe attack of dizziness, vomiting and fainting. Was confined to bed two days. Distress in stomach, sour eructations and occasional vomiting continued. By July 1, 1908, food could be retained only one hour. August 24, nine months after the beginning of stomach symptoms, I saw the patient and ordered a test meal and stomach analysis; this

1. Allaben, J. E.: Surgical Treatment of Perforating Gastric and Duodenal Ulcer, with Report of a Case of Perforating Gastric Ulcer; Recovery, ILLINOIS MEDICAL JOURNAL, August, 1909.

showed hyperacidity, a few blood corpuscles and the usual condition characteristic of gastric ulcer. Operation advised. At midnight two days later the patient vomited a half pint of fluid having the appearance of coffee grounds in which were some streaks of blood. At 3 o'clock the same night he was awakened and cried out with an intense pain in the stomach and a few minutes later was found upon the floor by members of the household, suffering agonizing pain.

A diagnosis of gastric perforation was made, the patient removed to the Rockford Hospital and a laparotomy done three hours from the time perforation occurred. A perforation was found in the anterior stomach wall about one inch from the pylorus, through which I could pass my index finger. The perforation was closed, first, by linen interrupted Lembert sutures; second, purse-string suture; third, a graft from the gastro-hepatic omentum.

The base of the ulcer was greatly indurated and very friable, so that little tension could be made upon the sutures. The case progressed without symptoms for three weeks, when vomiting began, and for two days everything put into the stomach was rejected. It was evident that the ulcer in healing had produced an obstruction of the pylorus. A posterior no-loop gastrojejunostomy was done. The patient made a good recovery. I saw this patient a few days ago, and now, after nine months, he is well, in good flesh, and is suffering in no way from stomach trouble.

The above report was written nine months after the patient was operated upon. Since then one year has been added to the history. During the first ten months of this last year's history, the patient enjoyed excellent health. For the last two months his health has gradually declined. He has had considerable pain in the epigastric region, has been losing flesh, is anemic and he has the facial expression of malignancy. His present symptoms are due undoubtedly to carcinoma of the stomach. That there is no obstruction at the site of the gastrojejunostomy is evident from the fact that there is an entire absence of vomiting, and from the fact that the pain is independent of the taking of food.

Glancing backward over the early history, we observe that symptoms of pyloric obstruction occurred almost simultaneously with the symptoms of gastric ulcer. The question then arises: Is this a case primarily of ulcerating carcinoma perforating the stomach, or one of ulcer upon the base of which carcinoma has been implanted secondarily? In view of the full history, we would say that it is primarily a carcinoma with secondary ulceration.

From a study of the material from 216 partial gastrectomies for ulcer, ulcer and carcinoma and carcinoma, in the Mayo's clinics, Dr. MacCarty in his conclusions says:²

CASE 2.—Through the courtesy of Drs. Crowell and Stevens of Rochelle, Ill., I saw the following case:

Miss A. T., aged 46 years. At midnight May 20, 1909, while vomiting, the patient was taken with intense pain in the epigastrium. Patient remarked that she had "broken something inside." Her attending physician stated that shock was not pronounced and that the pulse and temperature showed but little change until 4 o'clock the following day. I saw the case about 5:30 on the afternoon of the same day; pulse 116, temperature 99.3, respiration 14. Moderate distention and rigidity of abdomen. Facial expression good. The previous history shows that she suffered greatly from stomach trouble since 1882, a period covering twenty-seven years. During these years she had sour stomach, "water brash," a clear, sparkling water would run out of her mouth, she being unable to control it. Pain was considerable and most pronounced three or four hours after meals and

2. MacCarty, Wm. Carpenter: Pathology and Clinical Significance of Stomach Ulcer, from a Study of the Material from 216 Partial Gastrectomies for Ulcer, Ulcer and Carcinoma and Carcinoma, Surg., Gynec. and Obst., May 1910, pp. 449-462.

One cannot say positively that all carcinomata of the stomach has developed on ulcer, because carcinomatous tissue in the base of an ulcer may be an ulcerated primary carcinoma.

was relieved by taking food or by induced vomiting. Pain was especially pronounced after 4 o'clock in the afternoon and during the night. During the last year all of these symptoms became more pronounced.

The patient was transported 28 miles on a cot in a baggage car to the Rockford Hospital and operated on at midnight 24 hours from the time of perforation. The perforation was directly through the pyloric ring, the ulcer apparently being half way within the pylorus and half within the duodenum, and was about the size of a lead pencil. There was no induration whatever about the site of the ulcer. The perforation was closed with linen suture. The stomach was dilated and prolapsed to two inches below the umbilicus. The abdomen, which was filled with pus and gastric contents, was drained by rubber tubing. After closing the wound in the upper abdomen about the drains an opening was made in the appendiceal region and two rubber drains passed into the pelvis. The appendix was removed and a rubber catheter passed through the appendix stump into the colon about two inches and secured by a purse-string catgut suture.

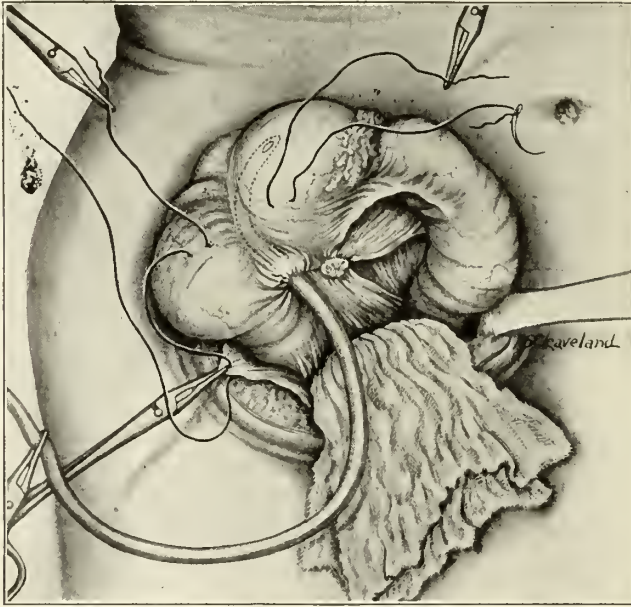


Fig. 1.—Catheter inserted into cecum through stump of appendix and secured by purse-string suture. On one side is shown stay suture passing through parietal peritoneum and serous coat of cecum ready to tie after the intestine has been replaced within the abdomen. The appearance of the wound after operation, and method of giving salt solution, are shown in Figure 2. (Illustration loaned by *JOUR. AM. MED. ASSN.*.)

Through this catheter physiologic salt solution was administered, at first quite freely and later by the drop method. The patient made a good recovery. Mopping or irrigation of the peritoneal cavity was not employed in either case. The catheter was removed on the fifth day. A small fecal fistula resulted, but closed permanently in a few days. Two months from the date of the operation for perforation I was obliged to do a gastrojejunostomy (posterior no-loop method) for pyloric obstruction, from which the patient made a rapid recovery.

A year has passed since the operation and the patient is in better health than for twenty-seven years.

In view of a retrospective study of the symptoms and of the morbid conditions found at the time of the operation or of the gross "pathology of the living" as Moynihan might term it, how can we profit in dealing with similar cases in the future?

As to the first case I would say that inasmuch as the perforation occurred quite near the pylorus, and the perforating ulcer was surrounded by a hard mass that must be either inflammatory or carcinomatous infiltration and inasmuch as the symptoms of gastric ulcer and pyloric obstruction appeared almost simultaneously as a part of the stomach symptoms and inasmuch as the peritoneum was not badly soiled owing to an empty condition of the stomach at the time of perforation and the patient's condition being fairly good, I think a gastrojejunostomy was indicated at the time the perforation was repaired.

Assuming that a gastrojejunostomy had been done at this time and that a diagnosis of probable carcinoma had been made, should a resection of the ulcer bearing area as recommended by Rodman have been undertaken as a secondary operation? Inasmuch as the operation is attended



Fig. 2—Patient held in Fowler's position by twisted sheet. By using comforts and pillows the shoulder-rest may be dispensed with. C, catheter held in cecum by sutures; I. P., glass irrigating point; T, thermometer. Temperature of solution 100 to 110 F.

by a considerable mortality, and inasmuch as we could not hope to prolong life more than from two to five years it would not have been justifiable.

In patients like the second case where the perforation is of twenty-four hours standing and with extensive soiling of the peritoneum, repair of the perforation and drainage is all that can be undertaken and gastrojejunostomy should be performed as a secondary operation as soon as symptoms of pyloric obstruction appear. The immediate results of gastrojejunostomy is one of the most satisfactory in surgery. The most likely complication in after results is probably peptic ulcer within the jejunum.

Regarding the success of this operation in any individual case Moynihan says:³

3. Moynihan, B. G. A., *Gastroenterostomy and After*, Brit. Med. Jour., May 9, 1908; and *Pathology of the Living and Other Essays*, W. B. Sanders Co., 1910.

That is a question that may be answered satisfactory only after the lapse of many months. In an operation of the severity of gastroenterostomy, an operation moreover by which certain physiologic principles seem to be set at naught, the lapse of two years is certainly not too much to allow us to speak with confidence as to its success.

The after treatment of perforating ulcer consists in placing the patient in Fowler's position, administering physiologic salt solution by the rectum or through the cecum (Fig. 2) and withholding food for three or four days.

When convalescence is established in cases where the stomach is considerably dilated as in my second case, lavage should be a part of the after treatment for a few weeks, thus preventing farther dilation by retention and fermentation of food and for allowing the distended atonic organ to regain its normal tonicity.

TUMORS OF THE TONGUE, BENIGN AND MALIGNANT.*

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CHICAGO.

The mucous membrane of the cavity of the mouth is derived from the epiblast and is frequently the seat of both papilloma and carcinoma, examples of which I wish to present to you to-night. The favorite localities are the mucous membrane of the cheek, the prolabium of the lip, the tongue, the soft palate and the pharynx.

In this connection, I wish to emphasize the importance of an *early* diagnosis in all ulcerative and neoplastic enlargements occupying these localities. It seems to me that histopathology as an aid to diagnosis is probably more neglected in this particular field than in any other, and why such should be the case I cannot understand. Henry T. Butlin, in an excellent article in the *British Medical Journal*, on the very early conditions of cancer of the tongue, classifies these conditions as follows:

1. Predisposing conditions, such as leukoplakia, ichthyosis, chronic superficial glossitis, which may exist for many years without the occurrence of cancer, but which undoubtedly render the individual much more liable to cancer than are individuals in whom the tongue is healthy.
2. Precancerous conditions, such as wart growths, thick plaques, sore places, which are not actually cancerous, but which inevitably proceed to cancer unless they are completely removed or destroyed.
3. Actual cancer, in one of its various forms, when it is obvious to an educated surgeon, and ought to excite suspicion in the minds of persons who are not experts.

* Read before the Chicago Medical Society, May 31, 1909.

I herewith append plates of cases illustrative of this condition (Figs. 1-6), and wish to report later a case which I had under treatment in an advanced stage, for which operation was advised as soon as the diagnosis was confirmed by a histologic section, but declined. The histories of the first two cases, namely, those of papilloma of the tongue, are as follows:

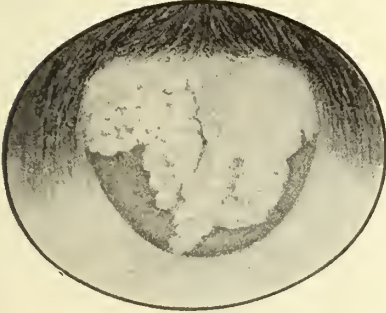


Figure 1



Figure 2

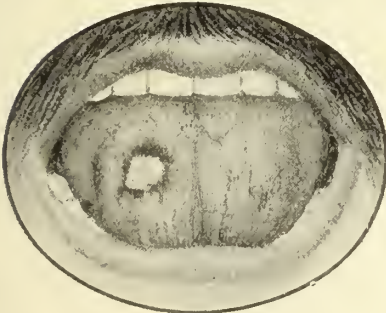


Figure 3



Figure 4



Figure 5



Figure 6

J. B., American, aged 35 years; married. Bartender by occupation. Was referred to me for operation by Dr. Robert Sonnenschein, with the following history:

Previous illnesses: Patient had syphilis sixteen years ago; was treated for some time. Family history: Negative. Present illness: Two years ago he

noticed a small red nodule on the front and right side of his tongue. This assumed a cauliflower, ragged appearance; no pain was experienced. The mass has shown a rather rapid growth during the past few months.

Status præsens: Patient is well nourished; appetite good; sleeps well. The tongue shows a large tumor mass, occupying the right anterior quadrant, somewhat pedunculated, although with a rather wide base, which was firm in consistency in contradistinction to the tumor mass itself, and which had to my mind the appearance of blastomyeotic tissue. It was very friable and bled easily on manipulation. The regional lymphatics, supraclavicular, and axillary glands were not enlarged.



Figure 7

Treatment by Dr. Sonnenschein was mercury and potassium iodid, the latter pushed to 150 grains a day, and given for some weeks, without affecting the tumor in any way. Patient's weight showed an increase from 165 to 171½ pounds.

Histological examination: A section of the tumor showed a papillomatous growth, with marked epithelial proliferation and karyokinetic changes.

The case was admitted to my service at the Michael Reese Hospital.

Operation: Ether anesthesia; no preliminary atropin. Head in elevated position. Preliminary ligation of the ranine artery, well removed from the site of operation. Excision of the anterior right quadrant of the tongue, some distance from the indurated pedicle, care being taken not to injure or occlude Wharton's duct. After ligation of a few bleeding points, interrupted catgut

sutures were used to bring the wound surfaces together. Liquid diet and a mouth wash of potassium permanganate advised. Uninterrupted recovery.

Dr. Herzog has kindly furnished me with the following histo-pathological report: The mass removed is about one inch square and over one-half an inch in thickness. It presents an irregular papillary surface, and a somewhat constricted base. Transverse section shows a very considerable thickening of the epithelial layers. It appears that the proliferating epithelial cells have, however, not really broken into and destroyed underlying connective tissue, but merely pushed it in front of themselves. Thickened epithelial layers are surrounded by a powerful wall of inflammatory tissue. The latter is composed almost exclusively

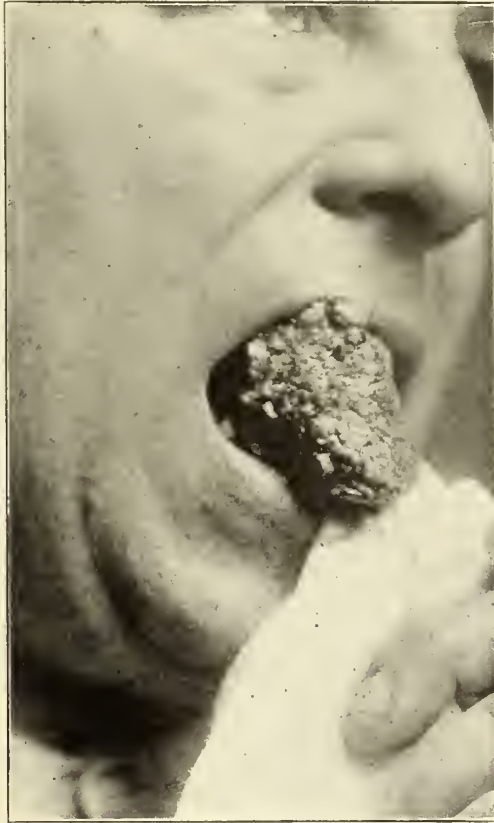


Figure 8

of small, round, mononuclear cells. Eosinophilic and plasma cells are exceedingly scanty. The proliferating epithelium here and there includes little abscesses, in which the polymorphonuclear leucocytes predominate; no blastomyces were found in these abscesses, or in any other part of the tissue. The mass removed is very probably not a carcinoma, but a papilloma, somewhat indefinite in its nature.

The second case, referred to me by Dr. G. W. Wagner, with the following history was admitted to the Michael Reese Hospital:

H. B., aged 61 years; occupation, butcher; nationality, Russian. Married twice; four children with the first wife; five children with the second wife. Has resided in America one and one-half years. Denies venereal history; no history of miscarriages in the wives.

Status præsens: Patient is a well nourished individual for his age; states that some three months ago he bit his tongue, which bled profusely, and was controlled by a cotton pad. Following this some four weeks he first noticed a beginning enlargement on the site of the injury, which has grown to the size of a navy bean. He complains of no pain, but, as in the previous case, is only troubled by reason of its mechanical presence. His appetite is good; sleeps well, and has not lost in weight.

The tumor mass had a more firm consistency than in the previous case, and its pedicle was more slender and its vascularity not so marked; at least, it did not bleed so easily on manipulation. The regional, as well as the supraclavicular and axillary lymphatics were no more enlarged than the numerous carious teeth might have produced.



Figure 9

Operation: Cocain, 2 per cent., injected into the base of the tumor, accomplished a good anesthesia, and a wedge-shaped piece of the tongue was excised, corresponding to and extending a short distance from the base of the tumor mass, and the wound closed by interrupted catgut sutures, and a mouth wash of potassium permanganate solution recommended.

The histo-pathologic report in this case was also kindly furnished me by Dr. Herzog, as follows: The main mass of the tumor removed is composed of fibrous connective tissue. The external surface is covered with thickened layers of epithelia, but the latter have not proliferated into the connective tissue. On the interior of the neoplasm there are found masses of small round or irregularly polygonal cells, which appear to take their origin from lymphatic endothelia.

This group of cells, on the whole, looks more like a subacute inflammatory reaction than a true neoplastic formation. Histologic diagnosis: Non-malignant fibroma molle or papilloma of the tongue.

The third case is one which I had under treatment some few months ago, and who absolutely refused excision of the tongue, so strongly indicated. The history is quite characteristic, growing out of a long-standing leukoplakia of the tongue, which probably was the underlying locus minoris resistentiæ, allowing of this atypical proliferation of epithelial cells, which has resulted in a typical rapidly proliferating carcinoma of the tongue, and corresponds to three cases referred to in Senn's book on tumors, which I reported, of epithelioma of the face developed in lupus vulgaris, in which probably the lupus was the underlying locus minoris resistentiæ. His history, as written by himself, is as follows:



Figure 10

Age, 46; no venereal infection. About four years ago, while sick with appendicitis, my nurse called attention to a white spot on the upper part of the right side of my tongue; also two smaller white spots on the cheek. I used listerine and other mouth washes, but it had no effect. I called on Dr. A., who pronounced it psoriasis of the tongue, and prescribed for me, but the medicine had no effect. About three years ago I called on Dr. B., and he suggested *x-ray* treatments, and said the disease is known as leukoplakia, and there is no known remedy for it. I continued the *x-ray* treatment for about eighteen months.

There were times during the treatment when Dr. B. thought the trouble was being cured, but these favorable indications were but temporary, and after

eighteen months of treatment the spots on my tongue had grown in size, and a much larger part had become involved. The lower part of the tongue was then almost completely coated. Dr. B. then told me that his brother had just returned from Europe, and while there he made it his especial business to consult eminent French specialists regarding my case, and that a noted French physician claimed that he had had many similar cases, and that he succeeded in curing all of his patients by injecting mercury. Dr. B. advised me to take this treatment, and I did. I began taking the mercury injections on December 1; after taking the treatment about three months, I experienced severe pains in my teeth and gums. The treatment was continued, with some intermissions, until about June 15, and I have taken no treatment since. My tongue has shown no improvement during the time of the mercury treatment.

About July 20th a spot on my tongue which had always been extremely painful and sensitive to touch broke open. This spot was about the size of a pea. Dr. B. examined me and pronounced it an abscess, caused by some infection, which would soon get better. The wound has been getting larger almost every day, and my gums and teeth are becoming more painful every day.

Last Monday Dr. C., who had charge of my case (Dr. B. being out of town) consulted with Drs. D. and E.; they decided on a treatment of very large doses of iodid of potassium; also suggested that a small piece of the tongue be clipped off for microscopic examination, which Dr. C. did not think necessary, and consequently did not do. Dr. C. has been cleansing the wound every day. He says it is healing up from below, and is getting better. I have lost about fifteen pounds since July 15. My appetite is poor, and I eat but very little solid food, mostly liquids. I get no sleep, on account of extreme pains in the gums and teeth. The saliva runs from my mouth almost all day and night.

The patient presented himself to me Oct. 1, with the above history. Upon examination of the tongue there was found an immense ulcer, which involved the center and right side of the tongue, almost its entire length; the posterior portion of the ulcer was bounded by an enlargement, probably the size of a small hickory-nut, which upon palpation was rather firm and consisted probably of the active proliferated portion of the neoplasm. The edges of the ulcer were undermined, inflamed and everted, and in spots showed active proliferation in the shape of small, well-defined tumor masses. The floor of the ulcer was covered with a dirty gray secretion, which was removed with some difficulty. Upon raising the undermined edges with a probe, one beheld the ulcer to be crater-like, involving almost the entire base of the tongue, and immediately brought to one's mind the possibility of an erosion of the ranine and lingual arteries, although from time to time he did have more or less profuse hemorrhage from the tongue. The lateral borders of the tongue and gums presented all the appearances of salivation, which was further evidenced by the copious flow of saliva. One also saw the remains of the extensive leukoplakia on the left side of the tongue. Upon manipulation by the thumb and first finger grasping the tongue, it was found to be quite firm throughout the main muscles of the tongue, namely, the geniohyoglossus.

The submaxillary lymphatics were but slightly palpable, while those anterior to the sterno-cleido-mastoid muscle, about its middle, were the size of a marble, and tender and painful upon palpation. Supraclavicular and axillary were not palpable. A section was immediately excised from the proliferated edge of the ulcer, and examined by Dr. Herzog, Dr. Hektoen, and myself, and all agreed that it was a rapidly proliferating flat-celled carcinoma.

Inasmuch as operation was refused, the treatment consisted in keeping the ulcer disinfected and overcoming the salivation and sustaining his strength, and relief of pain by means of anodynes. He died suddenly on the 12th of November. No post-mortem was allowed.

My object in reporting this last case is to emphasize the importance of Ribbert's theory, that there exists a certain relationship between the basement membrane and the overlying epithelial cells, which, if disturbed,

allows of the active proliferation of the overlying cells, and consequent invasion of the deeper structures to the point of malignancy. Also the importance of an early histologic diagnosis in these cases, and early radical operative interference, if we wish to lessen the mortality percentage of such cases.

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ON THE INFLUENCE OF HEREDITY IN TUBERCULOSIS.*

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It is a trite saying that an ounce of prevention is worth a pound of cure. The crusade against tuberculosis, which has in little over fifty years grown from practically nothing to a world-wide movement, has long been recognized to find its successful completion not so much in the cure of the tuberculous as in the prevention of tuberculosis. This is the real problem, and it is by no means made easier from the fact that the tuberculous infection, which constitutes the origin of adult consumption is, with great frequency, acquired during childhood if not already in infancy.

It is manifest that the tuberculous seed cannot grow except in an adapted soil, in a predisposed organism, and while an originally normal organism may become predisposed for definite reasons, such as disease, accidents, excesses, etc., thus giving to latent tubercle bacilli an opportunity to become active and produce disease, it is also possible for a predisposition to be inherited, being transmitted from parents to children, whether as a condition of insufficient resistance ("Minderwertigkeit") or as a hypersusceptibility to infection and its resulting disease.

Oliver Wendell Holmes once said that the proper time to begin a boy's education is a hundred years before he is born. It is not a *very* long time, and I venture to paraphrase Dr. Holmes' epigram by saying, the proper time to begin the treatment of tuberculosis is a hundred years before it commences: by preventing the development of a predisposition, of a soil favorable for the growth of the tubercle bacilli; for if we could eliminate from the human and animal species the predisposition, the susceptibility to the pathogenic action of the tubercle bacilli, an infection with these bacilli would not develop into tuberculous disease. When this problem is solved we shall have solved the problem of the Great White Plague.

Gentlemen, the subject of heredity, once all important in its relation to disease, appears, since the beginning of the bacteriologic era, to have retained only an academic interest. In the meaning and influence which I will attempt to outline it assumes an eminently practical importance.

The idea that there are diseases which are transmitted by heredity is as old as medical observation and medical thought. It offers a ready, and not unacceptable explanation of the threat pronounced in the Old

* Read in a Symposium on Heredity before the Chicago Medical Society, May 4, 1910.

Testament that the sins, which means the imperfections or errors of the parents, shall be visited on the children unto the third and fourth generation. This curse is made terribly true, e. g., in the case of syphilis.

It is not astonishing, even to our present mode of thinking, that tuberculosis, or rather the form of the disease which was known to the ancients, i. e., consumption, should have been classed among the hereditary diseases. From Hippocrates, whose Latin translator wrote the epigrammatic *phthisicus a phthisico natus est*, down through the middle ages and to modern times it appeared to be a self-evident fact that "tuberculosis runs in families" and what more natural than to explain this by calling the disease inherited. According to Sylvius¹ it is shown by frequent experience that entire families are inclined to phthisis, so that but few of their members escape the affection, and according to Richard Morton² it was well known to everybody that the children of phthisical parents are inclined to the same disease. Portal, Hufeland, Laennec, Schoenlein, Benjamin Rush and most great clinicians of the last century asserted the hereditary transmission of phthisis to be the most frequent cause of the disease, so that "There was perhaps no fact of experience regarded as so incontrovertible as the heredity of tuberculosis. Every day the physician sees tuberculosis reap its harvest among the progeny of a tuberculous father or a phthisical mother. He sees the children of such parents grow up scrofulous in childhood, and perish tuberculous in youth."³

Nevertheless the assertion of the hereditary nature of phthisis has for a long time had its opponents, and especially Villemin,⁴ who in 1864 showed tuberculosis to be an infectious disease, objected to the theory of its hereditary transmission very emphatically. Virchow⁵ had declared in 1864-5 that tuberculosis is transmitted not as the actual but as the potential disease, the predisposition to it being passed on. Louis⁶ had, in 1825, given but very lukewarm support to the theory of the heredity of phthisis by saying that about 10 per cent. of his consumptive patients had had parents die of the disease, but that they might just as well have acquired it in some other manner than by heredity, so that he had after all not observed any definite proof of the heredity of phthisis.

If during the first half of the nineteenth century under the stimulation of exact pathologic research, aided by the microscope introduced into pathologic investigation by Gluge, the old prevailing opinion of the actual transmission of tuberculous disease had given way to the idea that heredity was active more in creating a predisposition, even this eventually became severely shaken by the strict bacteriologic school and is to-day denied outright by many investigators. According to Virchow:

Tuberculosis is essentially a disease of extrauterine life, and if it is hereditary, which cannot be doubted, it is not congenital. It is not hereditary as disease but as predisposition. And at the Berlin Tuberculosis Conference in 1899 he said:

1. Sylvius, Franciscus Deleboe: Opera Medica, 1695, Tractatus iv; "De Phthisi."

2. Morton, Richard: Phthisiologia, Francofurti et Lipsiæ, 1691.

3. von Ziemssen: Wood's Med. and Surg. Monographs, New York, 1889, iii.

4. Villemin: Etudes sur la Tuberculose, Paris, 1868.

5. Virchow: Die krankhaften Geschwuelste, Berlin, 1864-65, ii.

6. Louis: La Phthisie pulmonaire, Paris, 1825; 1843, Ed. 2.

Until recently one dogma was considered as almost incontrovertible, i. e., the dogma of a congenital hereditary tuberculosis. This is a spook which haunts the human mind in many ways. I deny positively the heredity of tuberculosis. The bodies of new-born infants, which have not lived outside of the maternal womb, are not tuberculous. I am convinced that everything which in the new-born looked like tubercle was not tubercle. In my opinion in not a single authenticated case has tuberculosis been found on autopsy of a new-born infant.

Cohnheim,⁷ who, as you know, at first denied the correctness of Villemin's demonstration that tuberculosis is an infectious disease, and later became a pronounced contagionist, said in his well known pamphlet on Tuberculosis from the Standpoint of Infection:

I do not deny that tuberculosis can be inherited, but such an inheritance is probably a rare occurrence, and entirely unimportant etiologically as compared with extra-uterine infection.

With Villemin's, and still more with Koch's demonstration of the infectious nature of tuberculosis its hereditary transmission became as a matter of course more than questionable. Although Koch⁸ at first admitted that certain peculiarities may be transmitted which favor the development of germs introduced later into the body, the intra-uterine transmission of an actual tuberculous disease was to him the more problematical as his experiment animals which frequently became pregnant before as well as after infection, never had litters of young which were tuberculous before birth. Even the young of highly tuberculous mother animals were free from tuberculosis at birth and remained healthy for months.

In more recent years with the studies of Weismann,⁹ of Martius,¹⁰ and others, the direct hereditary transmission of tuberculosis, as of all disease *per se*, has been definitely disproved, although many French authors, notably Lannelongue, Landouzy, etc., insist upon the importance of hereditary influences, as do the Drs. Williams, e. g., in England, Austin Flint and Reginald H. Fitz, and others, in this country. In Germany, Baumgarten and his pupils stand practically alone in the assertion that tuberculosis is principally transmitted by heredity, and in Baumgarten's case it is a matter of mistaken terminology.

Before proceeding in the discussion of my subject, permit me to determine clearly just what is meant by the terms which I am using.

Disease according to the Standard Dictionary, is any departure from, failure in, or perversion of normal physiologic action in the material constitution or functional integrity of the living organism: a morbid condition resulting from such disturbance, or failure of physiologic functions.

After Orth's¹¹ definition disease is a process, a vital process, but one deviating from the normal. *Disease is life under abnormal conditions and with abnormal aspects.* The external cause of a disease (e. g., para-

7. Cohnheim: Die Tuberkulose vom Standpunkte der Infektionslehre, Pamphl., Leipzig, 1881; 1882, Ed. 2.

8. Koch, R.: Mitteilungen a. d. kais. Gesundheitsamt., Berlin, 1884, Bd. 2.

9. Weismann: Vortraege ueber Deszendenzlehre, Jena, 1902, cf.

10. Martius: Pathogenese Innerer Krankheiten, Wien., 1909.

11. Orth: In Senator-Kaminer, Marriage and Disease, transl. by Dulberg, New York, 1909.

sites) may be present; there may be an infection, but an infectious disease as a consequence of that infection does not begin until the parasites occasion disorder in the vital processes. It is absolutely necessary to distinguish between cause of disease and disease itself. A man may harbor in his mouth virulent diphtheria microbes without being ill; he has no diphtheria, although he carries about with him the cause of diphtheria, and can make others diphtheric by conveying to them the causative agents.

A contagious disease (*contingo*, to touch, come in contact) is one which is transmitted from one person to another by direct contact, while an infectious disease is one produced through the entrance into the body, and virulent action of, an infectious, i. e. pathogenic virus. *Infection* itself is, however, not the infectious disease (*in-ficio*, to contaminate); it is only the communication of the disease-germ and it is wrongly used in a synonymous sense with the resulting disease. We may be infected without being diseased, and since Straus, in the eighties, found virulent tubercle bacilli in the nasal secretions of healthy students in the wards of Paris hospitals, similar findings have frequently been reported. We all carry staphylococci and streptococci on our mucous membranes although we are not ill with septic disease. Diphtheria and typhoid bacillus carriers are no longer ill with diphtheria or typhoid although they are infected.

Since Gaub taught, in 1758, that pathogenic agents cannot by themselves be accused as the sole causes of disease but that the predisposition of the body must be considered as a deciding factor, much has been said and written concerning the importance of a predisposition to disease. While some writers claim that without predisposition there can be no disease, at least no infectious disease, since an infectious virus may be virulent for one and not for another individual [because it finds in the former a favorable soil, in the latter fails to find it]; others, especially in the first years of bacteriologic research refused to admit a predisposition at all.

So said Cohnheim in 1881: "According to our present views everybody in whose organism the tuberculous virus is introduced becomes tuberculous." Later, predisposition was taken to mean merely a negative resistance and is so understood to-day by many writers, but in more recent years predisposition has been recognized not as a negative quantity, but as an active condition of the organism by virtue of which an infection leads to an infectious disease. This has been recently elucidated especially by Wieland,¹² and by Schlueter¹³ in his excellent monograph, of which, to my surprise, no English translation has as yet been published as far as I know.

Experience decidedly forces us to assume that the perfectly healthy human organism is resistant against the permanent colonization of tubercle bacilli and that their efficient reception in the lungs, intestines, etc., only occurs when certain conditions are present which favor their colonization and multiplication. This unknown pathogenic something

12. Wieland: Beiheft z. Med. Klinik, 1908, No. 4.

13. Schlueter: Die Anlage zur Tuberkulose, Wien, 1905.

we call predisposition to tuberculosis, applying this term to a certain constitution of the tissues pathogenic of the organism. We cannot do without this predisposition says v. Ziemssen, which may be acquired as well as congenital. It exists with regard to other infectious diseases, such as typhoid fever, cholera, dysentery, etc.; why should we not also assume a predisposition for the action of the tubercle bacilli?

The principal factors in this connection are the bodily conditions, the peculiarities of the build, of the chemical composition, and of the activity of the organic tissues, and the qualities of the individual constitution.

The human body is not without protection at the mercy of external causes of disease, and particularly of parasites; on the contrary it possesses a large number of protective agencies, which being to a great extent regulating arrangements, enable it to offer resistance to abnormal conditions of life and to external causes of disease, the tendency of which is to generate disorders in the vital process, viz: to produce disease; they enable it to render those causes abortive, and thereby maintain the normal course of the process of life. Everything which prevents that regulation from taking place, every incapacity of the body to resist external causes of disease, therefore every peculiarity of the constitution which renders the latter unable in the struggle of the body with the causes of disease to maintain the normal course of the vital phenomena, every such peculiarity of the constitution may be designated as a tendency, as a predisposition to disease.

There are individual predispositions to disease, which we designate as family predispositions when the same special peculiarities of constitution appear in several members of one and the same family. Of course not all individual peculiarities of body, not all family peculiarities of body, are predispositions to disease; they are so only in so far as they do not prevent the production of disease, or in so far as they tend to favor it.

How can the influence of heredity be exerted upon a predisposition? Ruehle¹⁴ said:

The general conditions which contribute to the causation of phthisis are the so-called constitutional anomalies which in many cases have manifested themselves from childhood in the form of scrofula, or exist as an inherited or congenital taint without having disclosed themselves by symptoms.

How this inherited diathesis is produced, or what is its real nature, are questions beyond our present knowledge. But if the external form of the body, and mental qualities can be transmitted in families through generations, why should this not be the case also with the conditions which produce a disposition to certain diseases? Our only resort is to the concurrent testimony of all times, and this is so strong that no physician who makes an unbiased examination can reject it. Whole families have been destroyed by phthisis. The inherited influence may of course manifest itself in various ways: Sometimes in the form of a general deviation from ideal health, a "delicacy of constitution;" at other times in the form of a particular local affection of the thorax and its viscera. These manifestations may not be marked at birth or in early childhood, but only become evident in later years, especially at the time of more rapid growth.

14. Ruehle in von Ziemssen, *Cyclopedia of the Practice of Medicine*, Am. Ed., New York, 1875, v.

In my opinion the inheritability of phthisis is a very important factor. I regard phthisis as belonging in a high degree to those diseases which are in some way dependent upon an inherited tendency.

It has been productive of much confusion that the bare fact of a tuberculous family history was considered sufficient evidence of a tuberculous heredity. It has long been pointed out by such men as Broussais, Louis, Straus, Cornet and others that the parental disease often occurred years after the patient's birth. Since the infectious nature of tuberculosis is understood, the importance of extra-uterine infection by contact with tuberculous parents has been paid proper attention, and evidence was looked for of infants or of the young of animals, or then of fetus of both, which showed lesions of tuberculosis in their organs. And yet even such, as we shall see presently, cannot be called inherited any more than an infant which at birth shows signs of intra-uterine smallpox is said to have inherited smallpox. We rather say that the disease was acquired by intra-uterine infection, and the lesions present at birth while congenital, are not inherited.

There are general biologic reasons why we should not consider as hereditary all that is derived from the mother during intra-uterine life. In the amphigonous propagation of the species the value of the male germ is for hereditary purposes equal to that of the female, for we see, to cite Orth, how anxiously, if we may use such a term, Nature looks to it that at the fecundation of the ovum the future being shall receive just as much chromatin from the paternal as from the maternal germ; i. e. that from father and from mother the same amount of hereditary substance is transmitted. It follows therefore that the hereditary transmission of such qualities or possibilities only is possible as are inherent in the germinative plasma of both parents. This does by no means limit the hereditary possibilities to those derived from the parents. These themselves have either actually or potentially the possibilities inherited from their parents who in turn have received them from their parents, and, as Lorenz (cited after Schlueter) points out very correctly since in considering the inherited possibilities we must take into account not only the paternal, but in like degree the maternal ancestors whose determinants are active or dormant in the parental germ cells, it is evident that at a successful copulation an enormous amount of hereditary substance may be drawn from, and that any set of determinants may become activated in a given case. Thus, for instance, the arrival of a red-headed child in a family where all sisters and brothers as well as parents and grandparents, uncles and aunts are of dark complexion may find its explanation in a red-headed ancestor many generations removed.

The entire hereditary substance is materially and virtually contained in the two germinative parental cells which unite after the fruitful copulation, and once these cells have so united the act of inheritance and the influence of heredity is completed. Whatever influences may affect the fetus *after* this union of the paternal and maternal germ cell, is acquired and may produce congenital peculiarities, but these are not inherited. In such an acquirement the mother plays of course the more important rôle, for it is doubtful whether the father can exert any con-

siderable influence upon the growing fetus, while this is intimately connected with the maternal organism through the placenta.

Nobody will even dream of doubting or denying that structural and physical, as well as mental peculiarities can be inherited, that heredity is not limited to a transmission of the anatomical characteristics of the species. The large lower lip of the Hapsburgs, the hooked nose of the Bourbons are a matter of history, and Anthony Hope has, perhaps, unconsciously, made use of this fact in his "*Prisoner of Zenda*," when he endowed the hero of his story with the red poll and other characteristics of an interloping ancestor of his family. Orth cites Devay's account of the inhabitants of Eycaux, a little isolated village in the Pyrenées (Isère, France) who at the end of the eighteenth century almost all possessed six-fingered hands and six-toed feet. The transmission of this peculiarity was encouraged by the constant intermarrying, unavoidable on account of the isolation of Eycaux. Later when new and strange blood was introduced the anomaly disappeared.

In like manner are mental characteristics frequently transmitted directly from parent to offspring, although it is unfortunately too true that unusually brilliant parents often beget decidedly mediocre children. In consanguineous marriages, especially if these recur through many generations the variability of the hereditary substance is comparatively limited and in such cases structural anomalies, such as cleft palate, hare lip, spina bifida and mental traits are often transmitted. Orth explains the fact that the offspring of blood relations are frequently mentally deficient, thus that such mental deficiencies are already present in the parents and that these are responsible for the incest.

The words *inherited* and *congenital* are often used synonymously, but without justification, because as is evident from our consideration, although everything inherited is also congenital, it does not necessarily follow that everything congenital is also inherited. The opposite of *inherited* is *acquired* and this may be intra- or extra-uterine acquirement; anything acquired intra uterum is congenital but not inherited.

All that is present in or about an individual at the time of his or her birth is congenital. Congenital peculiarities need not be recognizable in the new-born infant but may be latent, just as inherited traits may be latent (e. g., the characteristics of puberty). The same may be true for disease. While syphilis, for instance, may be clinically present at birth (congenital) we also recognize a late congenital syphilis which need not become manifest for years.

Now what among the congenital phenomena is to be considered inherited? Surely not that which has occurred in consequence of disease in the fetus, for what the fetus receives from the mother in the course of its development is congenital but not inherited. If a mother transmits at any time some acute infectious disease to her child, nobody ever thinks of applying the word *inherited* even if this transmission occurs before the birth of the child. Whatever passes to the fetus by way of the placenta is as much acquired as that which is transmitted to the nursling through the mother's milk.

Since the influence of heredity ceases with the union of the parental germinative cells, the hereditary transmission of a disease could only take place if the germ-cells were diseased, in the disease under consideration, if they were tuberculous. Although tubercle, the anatomical characteristic of tuberculosis is very minute, it is difficult to conceive of a tuberculous spermatozoon, and we can hardly more readily imagine a tuberculous and yet viable ovulum. The contingency of a tuberculous ovulum being actually fructified, or of a healthy ovulum being fructified by a tuberculous spermatozoon is not likely to occur in fact, seeing how improbable it is that diseased germ cells could develop into a viable embryo, and if either ovum or spermatozoon were simply carriers of tubercle bacilli without being tuberculous they would not *in primis* transmit the disease but only the cause of the disease, they would carry infection from which congenital disease might develop. But even if a spermatozoon carrying tubercle bacilli were to be discharged during intercourse it is very unlikely that among the many millions just this one should become the paternal germ cell of the coming embryo; in fact Simmonds¹⁵ has reported two cases of men with testicular tuberculosis who procreated healthy children, in whom at the age of 9 to 24 months, respectively, tuberculous disease had not become discernible, and in the animal experiments of Gaertner and others it required enormous amounts of tubercle bacilli to obtain positive results.

Quite aside from the leading theory that diseases as such are not transmitted by heredity, we see how impossible it is that out of tuberculous germ cells, a viable embryo could develop, and if it did develop, that it would remain viable to term, or if born that it could survive the vicissitudes of infancy long enough to be a monument of an actually inherited tuberculosis. When it therefore happens, as it undoubtedly does, that an infant is born with evidences of tuberculosis, or, as is probably more often the case, with tubercle bacilli somewhere in its organs, especially in the hepatic hilus glands, but without pathologic evidences of tuberculosis, these tubercle bacilli are not derived from the father, but are carried from the maternal to the fetal circulation either intra uterum and ante partum, or then during labor.

We know, however, that tuberculosis is ordinarily not a bacillemia. The latest attempt to demonstrate the contrary has been sufficiently disproved. Excepting miliary tuberculosis only in the acute forms and in far advanced chronic phthisis, practically in the agonal or pre-agonal period, do the tubercle bacilli enter the blood without being destroyed or deposited in lymph glands, and post-mortem records show that the few infants on record who have been born with congenital tuberculous lesions came of consumptive mothers who invariably died within a few weeks after labor.

You are aware that Baumgarten claims an intra-uterine transmission of tubercle bacilli which are held latent on account of the vital energy being greater in the growing infant and child than in later life. It has

15. Simmonds. Deutsch. Arch. f. klin. Med., 1880, xxvii, cited after Cornet, Die Tuberculose, 1899, p. 242.

been shown by many investigators and clinicians that the young of all species which are subject to tuberculosis are highly susceptible to the action of tubercle bacilli and quite incapable of offering the slightest resistance. From the statistics of Papavoine (cited by Louis, l. c.) and those of Rilliet and Barthez¹⁶ (1845) down to those of to-day it appears that during the first six or nine months of life the mortality from tuberculosis is 100 per cent., after which it slowly falls to about 50 per cent. at the age of ten to twelve. Again, newborn animals, if infected with tubercle bacilli, succumb far more promptly than do older animals. Thus it appears extremely unlikely that the principal mode in which tuberculosis is acquired is by intra-uterine infection as Baumgarten has it. The fact that infants and children of consumptive parents frequently succumb to the disease is due to extra-uterine infection and to unfavorable environment. This is fully borne out by the experience in orphan asylums. Bollinger reported some years ago that in the orphanage in Munich in a number of years not a single case of tuberculosis had occurred among the pupils, although these came from highly tuberculized environments. Stich¹⁷ claimed to have seen only one case in Nuremberg in the course of eight years. An inquiry made in Paris among the *Enfants Assistés* (cited after Straus¹⁸) elicited a surprisingly small per cent. of tuberculous children when these were removed from their consumptive parents early enough. Bernheim's well known experience amounts to a human experiment and will bear repetition in this connection.

Bernheim prevailed on the consumptive mothers of three sets of twins, to send one each of their babies to the country, keeping the other one at home. The three infants who were thus removed from the danger of infection thrived and grew up well, while the children who had remained with their mothers all developed tuberculosis, and died of the disease.

But if tuberculosis is not transmitted as a disease, and is acquired only exceptionally in the uterus, it is otherwise with the predisposition.

Matthew Baillic, Portal, Hufeland and many others who spoke of scrofulous phthisis looked upon scrofula as leading to the wasting disease. Richard Morton already had called scrofula one of the most frequent causes of accidental, i. e., not directly hereditary, consumption. Early in the nineteenth century when the hereditary transmission of a predisposition was assumed more and more instead of the transmission of the disease, this predisposition was found in constitutional weaknesses of all kinds, foremost among which was scrofula, and this opinion was upheld even after the discovery of the tubercle bacilli, e. g., by Rindfleisch, Ziegler and quite recently by Orth, while other authors, notably Baumgarten, denied this predisposing rôle of scrofula, claiming that it was itself already tuberculosis.

16. Rilliet et Barthez: *Traité des mal. de l'Enfance*, Paris, 1845; Ed. 3, 1893.

17. Stich: *Deutsch. Arch. f. klin. Med.*, 1888, xlii; Cited after Cornet, *Tuberculosis* in Nothnagel's *Enc. of Pract. Med.*, Am. Ed., 1904.

18. Straus: *La Tuberculose et son Bacille*, Paris, 1895.

In like manner the phthisical habitus which was so graphically described by Aretæus as peculiar to those inclined to hemoptysis and by other authors as characteristic of candidates for consumption was claimed to be inherited because often congenital, and was asserted to be a cause of phthisis. Other authors, however, insisted that it was not a cause but an effect of the disease. Virchow spoke of a vulnerability of tissue in those predisposed to tuberculosis which he, however, did not define. Since 1882 the many studies on tuberculosis in all directions were also applied to predisposition and Freund especially took up his earlier (1858-9) investigations concerning the paralytic thorax, showing that a congenital narrow upper thorax aperture produced a predisposition to tuberculosis by inhibiting proper respiration and therefore efficient aeration of the apices. The well known studies of Birch-Hirschfeld concerning the anatomy of the apical bronchi, Schmorl's determination of a pressure groove on the upper and posterior aspect of the apex, Rothschild's explanation of the *Angulus Ludovici*, Woods Hutchinson's researches on the chest index, etc., all belong here but cannot be discussed for lack of time. It has even been claimed that a *locus minoris resistentiæ* is transmitted, that is, that the tuberculosis in a hereditarily predisposed subject develops in the same organ, on the same side, and even in the same portion of the organ as that affected in the parent.

The clinicians of old have always insisted that not only the children of consumptives are hereditarily inclined to phthisis, but also children of persons afflicted with cancer, with syphilis, lead poisoning, alcoholism and with any wasting disease, likewise the children of very old and very young parents, etc. Just as everything affecting a person's health has at one or another time been classed as a cause of phthisis, so everything has been said to be capable of producing a predisposition. It appears then that such a predisposition if due to parental debility from other causes than tuberculosis could not be specific. However, opinions are not wanting to the effect that the predisposition to succumb to the action of the tubercle bacillus is specific. Courmont elaborated a number of years ago a rather striking hypothesis, on which he published many communications, and which was warmly supported by Arloing and appears to find support in the investigations of the last years on what Richet calls anaphylaxis, and which von Behring had long before him described as hypersensitiveness.

Courmont said that the specific toxins and soluble products of tubercle bacilli which form in tuberculous foci pass into the circulation and are, in the case of tuberculous pregnant women carried to the placenta, whence they are taken up by the fetal circulation. The fetus is then in the same condition as is an experimental animal inoculated with filtered cultures and offering a favorable soil for the first bacilli that invade its organism. Rosenau and Anderson¹⁹ demonstrated conclusively that the condition of anaphylaxis is transmitted by heredity and thus proved the possibility that a morbid disposition in the sense of an altered resistance, the *allergie* of v. Pirquet, may be transmitted from parent to offspring.

19. Rosenau and Anderson: Hyg. Lab. Bull. 29, U. S. P. II. and M.-II. Service.

They said: "Now that we have proved that this hypersusceptibility of anaphylactic action in the case of horse-serum may be transmitted hereditarily in guinea-pigs, may it not throw light upon the fact that tuberculosis runs in families?"

In spite of the fact that many consumptive parents have healthy offspring who never contract tuberculosis, and reversely that many children and adults become tuberculous whose parents never were so affected, it appears at least reasonable to suppose that the presence of debilitating diseases in the parents influences the natural resistance of the offspring to any infection adversely. We must also admit, after the researches of Courmont, Rosenau and Anderson, etc., which have been verified by other experimenters that a condition of hypersusceptibility may be transmitted which then is specific.

But the question presents still another aspect. Epidemiologic studies have long since shown the immunity enjoyed by certain persons to infections to be due to prior infection or intoxication with the particular germs or their toxins, or then to such a prior infection in the parents from whom the immunity was transmitted to the children. In this manner the fact is explained that many diseases which centuries ago destroyed their tens of thousands now are comparatively harmless; it also explains for instance the relative immunity of the Jewish race to tuberculosis. Rindfleisch claimed many years ago that nations which are subject to epidemics, in course of time become accustomed to them and more or less immune. Reibmayr²⁰ claims in a very interesting monograph that tuberculosis is undoubtedly transmitted by heredity, but that at the same time a degree of resistance or immunity is transmitted, and that the more thoroughly a race is in this manner permeated with tuberculosis the sooner it can work out its salvation from the ravages of the disease.

Effertz²¹ has observed among the Central American Indians that syphilis never occurs in its primary or secondary manifestations and is an exceedingly mild disease, while the natives are entirely non-resistant to tuberculosis. He argues that syphilis has existed among them for so long that they have acquired a considerable degree of immunity, which derives support from the fact that whites contracted the disease in virulent form from native women who showed no symptoms whatever. On the other hand, since tuberculosis was brought to the Indians only with the Caucasian invasion they have not yet become sufficiently permeated with the disease to have acquired an immunity.

For some time various observers have come to the conclusion that, the existence of hereditary predisposition being granted, this factor need not necessarily darken the chances for a cure, and that indeed, it might even be a favorable factor in the prognosis. Flick²² is one of those who deny the influence of heredity from a prognostic standpoint and believe in a transmitted partial immunity. Weicker²² recalls that Meissen was the first one thus to point out that patients with hereditary pre-

20. Reibmayr: *Die Ehe Tuberkuloeser und ihre Folgen*, Wien.

21. Effertz: *Wien. klin. Wchnschr.*, 1904.

22. Cited after Karl von Ruck, *Am. Jour. Med. Sc.*, August, 1907.

disposition are not at a disadvantage in point of the improvement aimed at, as compared with those without hereditary predisposition. This view is also supported by Turban and by Rumpf.

Dr. Karl von Ruck collected, in 1907, the literature on the question and supplemented it from statistics of the Winyah Sanitarium. He found that of 1,327 patients discharged as cured or improved, 434 or 32.63 per cent. had given a history of ancestral tuberculosis, while such a history was elicited in 47 out of 187, or 25.13 per cent. patients who failed to improve or grew worse, so that we find a difference of 7.5 per cent. in favor of an hereditary influence from a prognostic standpoint.

Gentlemen, the subject under consideration is too large to be handled in a short paper. For the sake of covering many phases I was obliged to present these somewhat disconnectedly and to leave out details and many important points. I have not considered the information to be gained from statistics at all, and also had to omit the results of comparative tuberculin and serum tests in newborn infants and their mothers. These questions I hope to discuss in a later communication.

My studies on the influence of heredity in tuberculosis suggest the following conclusions:

1. Tuberculosis as a disease is never inherited.
2. A general and a specific predisposition (hypersusceptibility) may be transmitted; whether an actual tuberculosis develops on this foundation depends upon an exposure to infection. The transmitted predisposition is probably modified by a degree of specific resistance, which may likewise be transmitted.
3. Congenital tuberculosis is exceedingly rare and can therefore not be admitted as the principal cause of phthisis in adolescence or adult life.
4. Congenital tuberculosis is not a hereditary disease but is due to intra-uterine infection by way of the placenta. It is only possible when the placenta is pathologically altered.
5. Congenital tuberculosis is observed only in the infants of women with far advanced phthisis, the mothers in all cases on record having died soon after delivery.
6. Infants with congenital tuberculosis succumb always to the disease in the first weeks or at most months of extra-uterine life.

100 State Street.

TUBERCULOSIS OF THE EAR, THROAT AND NOSE.*

ARTHUR E. PRINCE AND W. G. BAIN.

SPRINGFIELD, ILL.

Tuberculosis of the lungs was described by Hippocrates,¹ B.C. 460. He also alludes to "ulcers in the tube of the lungs." Probably this was the first description of tuberculosis of the larynx. In 1829 Albers² gave

* Read at the Sixtieth Annual Meeting of the Illinois State Medical Society, held at Danville, May 17-19, 1910.

1. Lockard: *Tuber. of Nose and Throat*, 1909.

2. *Die Pathol. u. Therap. der Kehlkopfkrank.*, Leipzig, 1829.

a description of the clinical appearance of tubercles in laryngeal phthisis, and the transformation of these into ulcers. In 1856 Wunderlich³ called attention to the comparatively frequent appearance of tuberculosis in the larynx and lung diseases of long standing, when accompanied by colossal secretion. In 1860 Gerhart⁴ reported a series of cases in which he clearly described syphilis, and differentiated it from tuberculosis by means of the laryngoscope, which was made practical in 1855 by Garcia.⁵ In 1879 Oscar Heinze⁶ demonstrated that ulceration in the larynx and trachea never leave tuberculosis, unless there is a simultaneous or subsequent tuberculosis of the mucous-membrane. In 1882 Koch demonstrated the tubercle bacillus, and presented evidence to show its etiologic relation to tuberculosis in man. Both before and since this time the recognition of many cases of tubercular laryngitis, and the reporting of the same as primary and secondary disease, has filled medical literature with a voluminous bibliography on this subject, to detail which is not the object of this paper. In comparison, the volume of literature on tuberculosis of the ear, nose, and accessory sinuses is very meager.

Lockard⁷ in 1909 collected the data on 3,366 cases of tuberculosis, in which there were seventeen cases of nasal tuberculosis. He states that of the accessory sinuses, in so far as reliable statistics are available, the maxillary has been tuberculous twenty-two times; the frontal cells in four cases, and the ethmoidal and the sphenoidal combined in two cases.

In February, 1907, Fein⁸ describes a case of tuberculosis of the nasal mucosa, which was probably primary tuberculosis in one turbinated bone, and states that he knows of only one case besides this one, on record.

In August, 1907, Gleitsmann⁹ states that tuberculosis of the accessory sinuses is of rare occurrence. He says further, that the majority of cases seem to be due to extension from a neighboring focus. He reports twenty cases, twelve of which were of maxillary involvement.

August 17, 1909, Thrasher¹⁰ reports a case of primary nasal tuberculosis in a girl aged fifteen years.

In September, 1907, Shoemaker¹¹ reports a case of tuberculosis involving the nose, with destruction of the deeper tissue. Dr. Ravogli stated that he had seen two similar cases.

In October, 1908, Mosher¹² states that owing to the protective power of the nasal mucous-membrane, primary tuberculosis of the nose is rare. Secondary tuberculosis of the nose is more common than primary.

The literature on tuberculosis of the ear would indicate that this disease is more prevalent here than in the nose and accessory sinuses. In October, 1906, Crockett¹³ reported six cases.

3. Handbuch d. Spec. Path. u. Ther., Stuttgart, 1856.

4. Ueber Syphil. Krankheit. d. Kehlkopfes, Virchow's Arch., xxi, 1860.

5. Physiol. Observ. on Human Voice.

6. D. Kehlkopfschwindsucht, Leipsic.

7. Lockard: I. c., p. 269.

8. Jour. Am. Med. Assn., Feb. 2, 1907, p. 461.

9. Cited by Jour. Am. Med. Assn., Aug. 3, 1907, p. 419, from Laryngoscope.

10. The Lancet-Clinic, Cincinnati, Aug. 17, 1907.

11. Jour. Am. Med. Assn., Sept. 14, 1907, p. 942.

12. Jour. Am. Med. Assn., Oct. 17, 1908, p. 1364.

13. Jour. Am. Med. Assn., Oct. 20, 1906, p. 1293.

Tyerson states that the disease is rare, but is often secondary to pulmonary tuberculosis. In 1907 Harland,¹⁴ speaks of three operations for tuberculosis of the ear. In October, 1908, Blake¹⁵ of Boston, speaks of the clinical aspect of tuberculous infection of the ear, and states that disease is characterized by a considerable and rapid destruction of all tissues, which is coupled with a lack of preliminary subjective symptoms. Reik¹⁶ stated that tubercular suppuration of the middle-ear is not so dangerous as suppuration due to pyogenic organisms.

Although our study of the literature on this subject has not been exhaustive, it is obvious to us that the reports of these cases are very few in proportion to the occurrences of the disease, and the literature is very meager in comparison with the literature on tuberculosis in other parts of the body.

In general, tubercular infections occur in any part of the body in one of three ways. Infective material is deposited on the mucous surface of the air passage, or the intestinal tract at the same time of inhalation of tubercular contaminated air, or at the time of ingestion of tubercular infected food, or at the time of excretion of tubercular bearing secretions. Again tissue may become involved in any part of the body secondarily as a result of the extension of the tubercular process over contiguous tissues, and lastly, a tubercular process may be set up in a tissue when the resistance of that tissue is low after the tubercle bacilli are brought to and deposited in the tissue by way of the circulating blood, or circulating lymph.

Once the tubercle bacilli have been deposited in the tissue, the resistance of which has been lowered either by local or general causes, then the process of tubercular degeneration begins: the multiplication of bacteria, the releasing of endo-toxins, and the formation of toxic products from the disintegration of tissue cells.

The effort of nature to antagonize the process and repair the damage, results in induration, giant cell formation, scarification, and calcification. These are the pathologic changes which our histologic study of these lesions shows. Inasmuch as the development of other organisms in the tissue give rise to similar pathologic changes and similar clinical pictures, neither the pathology nor the clinical picture can lead us to a positive diagnosis of these cases when one has not found the tubercle bacilli.

In our observations on this subject the actual demonstration of the presence of the tubercle bacilli has been in every case the basis of our diagnosis. The description of clinical symptoms of our cases wherever we will detail them, will be given to call attention to the lack of uniformity in the clinical aspect of these classes of cases.

We wish to report thirty-six positive cases of tuberculosis, the diagnosis of which was made from the microscopic examinations of excretions from infected tissue. These cases have no value in a comparative

14. Quoted from Laryngoscope, January, 1907, in Jour. Am. Med. Assn., Nov. 16, 1907, p. 977.

15. Jour. Am. Med. Assn., Oct. 10, 1908, p. 1256.

16. Jour. Am. Med. Assn., Oct. 10, 1908, p. 1256.

statistical way because all cases coming to the David Prince Sanitarium during the past twelve months while we were making these observations were not examined microscopically.

The procedure adopted by us in our routine examination is not difficult. It must have been necessarily simple, as in routine practice one cannot keep the cases under observation for any length of time; also a large per cent. of the cases came from other towns and, therefore, we had only the one chance of making an examination.

Our procedure was as follows: Inspection of the sinuses was made; pus and excretion was secured from the various atria of discharge. These specimens were examined for tubercle bacilli by a modified method of Zihl-Neilson, recommended by Charles E. Mix, Chicago, Ill., viz.: The material was smeared on slides, fixed with heat, stained for three minutes with carbol-fuchsin, washed, decolorized in 10 per cent. sulphuric acid, again washed and counter-stained with picric-acid, and *dried with a blotter*. This preparation has many advantages over the methylene-blue counter-stain.

There is nothing in the field that has a stain except the tubercle bacilli. We, therefore, can study our specimens much more rapidly.

The lighter color of the back-ground makes it practical to prepare very thick smears, hence, each field we pass over contains a much larger amount of material than when stained with methylene-blue. When methylene-blue is used as a counter-stain there is a deep staining of the nucleus of the pus cells, which obscures any tubercle bacilli beneath the pus cells, or within the cell near the nucleus. We have, thus, been able to determine the presence of the tubercle bacillus often when it might otherwise have been overlooked.

There is a variety of tubercle bacilli which we have noticed in which only the granular portions are brought out with the acid-fast stain. The bodies of the organisms take the blue stain, therefore the granular portions which are red are indistinct, and often not observed. With the picric-acid oftentimes these granular forms have been numerous, and have at once attracted our attention, so that a continued search demonstrated the presence of typical tubercle bacilli.

The frequent finding of tubercle bacilli in the excretion from the sinuses and tonsils, influenced us to adopt with enthusiasm Rosenberger's¹⁷ demonstration of the bacillus in the circulating blood. In a number of cases his method was tried and the acid fast organisms demonstrated, even when we were not able to find them in the secretions. In view of the doubt thrown on Rosenberger's method we found it necessary to discard this as a routine procedure.

The technic in the examination of the tonsils was accomplished by making a half dozen or more complete sections of the tonsil, placing over the fresh cut surface a slide and examining carefully for areas of caseation. When these were located the material was removed with a platinum wire, and examined by above method. When no such areas were

17. Am. Jour. Med. Sc., February, 1909.

found material was scraped with the edge of a slide from the cut surface and an examination of this was made.

In cases of laryngitis, the diagnosis was made from finding the positive tubercle bacilli in the sputum.

For convenience in description we have collected the cases as follows: Tubercular laryngitis, four; tuberculosis of the tonsil, nine; of the middle-ear without mastoid symptoms, ten; mastoids, five; of the nose, three; of the frontal sinus, two; of the maxillary antrum, one; of the soft palate, one; of the ethmoidal sinus, two.

TUBERCULAR LARYNGITIS.

1. C. B. L., plasterer, aged 25 years. Had hoarseness and cough. Examination November 10, 1909, showed swollen ulcerated larynx. Tubercle bacilli in sputum. Consolidation in right lung at the apex.

2. A. B. C., clerk, had been losing weight for some time. Had a slight cough, had had hemorrhages. Lung findings were negative. The patient suddenly became hoarse and noticing the irritation, soon after consulted us. There was a swollen ulcerated condition of the larynx. Tubercle bacilli were present in the sputum. Member of family had tuberculosis.

3. Mrs. J. W., housewife, aged 36 years. Four days after confinement, Nov. 15, 1909, had severe tonsillitis with temperature, and considerable inflammation of the throat. This was accompanied by a profuse secretion. The patient was very hysterical, and the tonsillitis was credited with inflammatory condition of the larynx. The lung findings were doubtful. Tubercular laryngitis was overlooked until an examination of the sputum showed the presence of tubercle bacilli. The condition failed to subside. Later the pulmonary involvement became marked. The patient died eight weeks after the diagnosis was made.

4. U. M., male; suspicious ulcerations in the larynx. The aspect a general tubercular condition. Tubercle bacilli were demonstrated in the sputum, Sept. 23, 1909.

TUBERCULAR TONSILS.

5. Master B., no clinical history. Diagnosis of tuberculosis from hypertrophied tonsils after removal, Nov. 23, 1909.

6. Mrs. W., housewife, positive tubercle bacilli found in hypertrophied tonsils after removal. No history.

7. Mr. N., farmer, no clinical history. Diagnosis of tubercle from hypertrophied tonsils after removal, Aug. 9, 1909.

8. Miss W., aged 18 years. General health poor. Tubercle bacilli in hypertrophied tonsils after removal. No history.

9. Mr. C., diagnosis of tuberculosis from hypertrophied tonsils after removal. Sept. 3, 1909. No history.

10. Master D., hypertrophied tonsils removed, June 1, 1909. Tubercle bacilli associated with a large amount of degenerated tissue and deposits of calcium and caseation. No clinical history.

11. Mr. N., farmer, aged 35 years. Loss of weight; had hemorrhages. Tuberculosis of the lungs was suspected, but had not been determined. Many tubercle bacilli were found in the hypertrophied tonsils after removal, Aug. 9, 1909.

12. Master M., aged 12 years. Had loss of weight, loss of appetite, indisposition to play. General downward tendency. Tubercle bacilli were found in the crypts of the tonsils. No operation was performed. No lesions were found in the lungs, April 13, 1909.

13. Master W. F., aged 11 years. Was indisposed, loss of appetite, occasional loss of interest in play with a frequent tonsillitis and some fever, some enlarge-

ment of the tonsils and slight enlargement of the glands of the neck on one side. Refused to have the tonsils removed, so an examination of the tonsils was made May 19, 1909, inserting a probe deep in the tissue removing as much secretion as possible. This secretion showed the presence of tubercle bacilli.

MIDDLE-EAR WITHOUT ACTIVE MASTOID SYMPTOMS.

14. Miss B., aged 20 years. Recurrent secretion from middle-ear. Tubercle bacilli present, May 5, 1909. No history.

15. Mrs. J. C., aged 40 years. Had had discharge from middle-ear for fifteen years. Had a pulmonary involvement at the time she came to the sanitarium, July 10, 1909. Positive tubercle bacilli present in the discharge.

16. Miss P., no history Sept. 8, 1909. Had a viscid discharge from middle-ear which contained many granular forms of tubercle bacilli, also characteristic forms. No other involvement.

17. Miss N., had had a chronic otitis-media for five years. In every other way was in good health, Nov. 7, 1909. Suffered some inconvenience from the discharge. Tubercle bacilli were demonstrated. Two subsequent examinations did not show them.

18. Mr. K., aged 57 years. Had had discharge from middle-ear for fifteen years. Tubercle bacilli were demonstrated Nov. 28, 1909. Treatment with alcohol and salicylic acid for three months dried up the secretions. No recurrence was reported. Man was in perfect health otherwise.

19. Mr. H., aged 50 years about July, 1909. Middle-ear discharge. Tubercle bacilli present. Case was treated with tuberculin and recovery was reported.

20. Master D., November, 1909. Had middle-ear discharge for several months. General health was bad. No pulmonary condition had been noticed. Tubercle bacilli were demonstrated in the secretion. Later abscesses developed in the hip, knee and ankle.

MASTOID.

21. Mr. E., aged 25 years. Middle-ear discharge with mastoid involvement. Radical operation was performed May 29, 1909. This was a mixed infection with streptococcus. Complete recovery was the result.

22. Miss H., aged 40 years. Had had a chronic middle-ear discharge for ten years. Mastoid involvement. Radical operation was done Dec. 4, 1909. Ten days later patient developed general tuberculosis and died.

23. Miss B., April 17, 1909. Had an acute attack of otitis-media with high temperature, enlarged glands and loss of weight. Mastoid became involved. Discharge contained tubercle bacilli. Radical operation was done May 17, 1909, and patient was cured.

24. Mr. A., May, 1909. Had a chronic discharge of the middle-ear. Mastoid became involved. Tubercle bacilli were present in the discharge. Operation was followed by considerable pain and tubercular discharge continued for four weeks. No later report has been made.

25. Mrs. C., came to us with a mastoid involvement, and a tubercular discharge of the middle-ear, which had been chronic for years. Radical operation was performed, but a viscid discharge containing tubercle bacilli persists.

26. Mrs. S., came to us with a middle-ear discharge and mastoid involvement. No previous history was obtained. Radical operation was performed and patient made a good recovery.

27. Mr. M., aged 21 years. Had recurrent attacks of otitis-media. He came to the sanitarium with a discharge. Tenderness over the mastoid and other symptoms of mastoid involvement. Tubercle bacilli were found in the secretions. An operation May 8, 1909, was performed, but the wound did not heal readily. Granulation did not form over the exposed bones. Later he had a consolidation in the right lung. Soon after this was observed he went from us to another city where another operation was attempted but the patient died on the table.

NASAL.

28. Mr. M., aged 45 years, December, 1908. Had an ulcer on the bridge of his nose, which failed after the most vigorous antiseptic treatment for eight months to heal. The scrapings of this showed the tubercle bacilli. Cauterization with thermo-cautery permanently removed the condition.

29. Mr. H., April 6, 1909. Had been suffering with chronic acne for many years. Was suffering from hypertrophy of the mucous-membrane and turbinates. Had a recurrent pustule in the external nasal orifice. An examination of this pustule showed the presence of tubercle bacilli. This particular pustule was so similar to others on the body, that out of curiosity an examination of about twenty of the others were made with the result that of the twenty, three showed the presence of positive tubercle bacilli. The general health of this patient had been bad for several months. He had lost considerable weight, and occasionally had temperature, and had such a constant feeling of malaise that he had consulted three different physicians relative to constitutional trouble. Each of these made a careful physical examination with the result that no local tubercular focus was found. Patient still continues in same condition.

30. Mr. H. G., aged 27 years. Had an ulcer of the septum, examination of the scab from which showed the presence of tuberculosis. This was removed permanently by the use of the thermo-cautery, May 5, 1909.

FRONTAL SINUS.

31. Master B., aged 11 years. Had adenoids and abscess of the frontal sinus. Operation was performed on both Sept. 3, 1909. Diagnosis of tubercle bacilli in the concretions from the sinus was made after the operation. Patient recovered.

32. Mr. R., aged 35 years, Sept. 3, 1909. Had a general tubercular aspect with discharging abscess of the frontal sinus and maxillary sinus containing tuberculosis. No operation was performed. Patient continues in about the same condition.

PALATE.

33. Mr. W., aged 48 years. Had slight irritation of the throat for which he came to the sanitarium. Man is well nourished, enjoys perfect health in every other way. The irritation had continued for several months previous to consulting us, at this time he coughed up white putrid masses. Two patches were observed above the uvula. These patches somewhat resembled thrush, they showed but little inflammatory condition. The examination of the scraping from these areas, however, showed the presence of tubercle bacilli. Thermo-cautery performed August, 1909, removed the condition entirely.

ANTRUM.

34. Miss S., aged 18 years. Was well nourished and enjoyed good general health in every way except that she had thickening of mucous membrane of the nose with constant purulent discharge. Came to us with a pain in the antrum with symptoms of antrum involvement on the right side. An operation was performed March 5, 1910, and the antrum was found filled with a large amount of caseous material having a fetid odor. This material contained many tubercle bacilli. Up to the present time no complications have developed.

ETHMOIDAL.

35. Mrs. G., aged 38 years. Had been in declining health for two years. Had lost weight, had temperature and general tubercular aspect. Had constant headache. Had a profuse nasal discharge. Pulmonary tuberculosis was suspected, but no such condition was found. There was no cough, no tubercle bacilli in the sputum, but the nasal discharge contained many tubercle bacilli. The source of the discharge was located in the ethmoid. Operation was performed Jan. 17, 1910, but some discharge continued for six weeks, at which time the patient went out of our care.

36. Mrs. B. H., aged 23 years. Had loss of weight, afternoon temperature, malaise, general weakness, indisposition, constipation and constant headache. Occasionally attacks of heart failure and fainting, when the pulse would become almost imperceptible. Tuberculosis was suspected. At least eight physicians examined this case with the result that not one of the eight could locate a tubercular focus. Frequent examinations of the sputum failed to show the presence of tubercle bacilli. February, 1908, while in the sanitarium to find relief from the headache, the patient happened to be in the office when she suddenly became slightly gagged from an obstruction in the air passage. Inquiry in regard to the cause of the peculiar facial movements at the time, divulged the fact that two or three times a week, she was in the habit of going through these contortions in order to get rid of a mass of secretion, apparently coming from the nasal cavity. The appearance of this mass when removed showed that it was about the size of the little finger nail, and flattened conforming to the shape of the space beneath the middle turbinate. The consistency of this was gummy. It had a decidedly putrid odor. An examination of the material for tubercle bacilli showed the presence of them in very great numbers. An operation was performed: the ethmoid was eviscerated. This did away with the headache, temperature, constipation, in fact all of the general symptoms from which the patient suffered. Collapses from heart failure ceased, and the patient has constantly improved since that time, and feels that she owes her life to this operation.

From a study of this series of cases, we cannot make any positive declaration as to the nature of the development of tuberculosis in the regions described. But there are a number of conclusions which suggest themselves and to which we now wish to direct your attention.

First, tubercular laryngitis seems to be more often associated with a pulmonary, and general tubercular condition than the disease in other localities.

The result of our operations on tubercular tonsils would seem to indicate that when the disease is primary in this location it can be eliminated by tonsillectomy. The two cases in young boys at once suggest the advisability of a careful investigation of the tonsils to account for the many cases of retarded development in children.

Middle-ear infections with tuberculosis give rise to fewer general symptoms than the disease in other parts of the head, but when it extends to the mastoid it becomes serious and less amenable to treatment of any kind. There seems to be a greater danger from a general tuberculosis following operations in this region than elsewhere.

Tuberculosis of the mucous surfaces as is suggested by our cases of nose and palate involvement, seem to be readily curable by means of the thermo-cautery.

Such cases as case twenty-nine of our series with numerous tubercular infected pustules cannot help but strike one with the idea of the possibility of a hidden tubercular focus in the lungs or other part of the body, which constantly throws into the circulation tubercle bacilli to be carried to the peripheral circulation and there to be deposited where the resistance of the tissues is low. Such areas as the sight of a recent acne pustule offer a fertile field for a new tubercular process to start.

By keeping in mind such symptoms as we have detailed in the two cases of ethmoidal tuberculosis, we believe that many obscure general

conditions not diagnosed could be accounted for by making a more thorough examination along these lines.

Our study of this subject has impressed us most emphatically with one fact, and that is, that too little attention has been paid in the past to the possibility of tuberculosis in the ear, throat and nose.

THE DAVID PRINCE SANITARIUM.

THE TREATMENT OF RECTAL FISTULA.*

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CHICAGO

Many methods have been advocated for the treatment of rectal fistula. I shall refer to only three of them, viz.: simple incision; the injection of bismuth paste; the incision or excision with immediate suture (proctorrhaphy).

1. *Simple Incision*.—The method of simple incision and allowing the wound to heal by granulation is and has been employed almost universally for many years in the treatment of this disease. Those of us who are operating quite frequently, for this malady, know its disadvantages, drawbacks and frequent failures to cure. This operation has done more than any other, unless it be that of the ligature or clamp and cautery for hemorrhoids, to bring disrepute upon rectal surgery. The laity dread, to this very day, a rectal operation more than any other surgical procedure because of the fear of pain, and the fear of recovery with the loss of control over the bowels. Yet, we know that each of the above operations in the hands of experts may give good results. The following are some of the objections to the simple incision method of operating for fistula:

(a) Low percentage of cures: Tuttle says "in 2,196 cases operated on by surgeons in general hospitals less than 45 per cent. of them were even claimed to have been cured." When you recall that perhaps at least 15 per cent. of these were simple anal fistulas, all of which were amenable to treatment and cured, you will observe that less than 30 per cent. of the remaining cases were even claimed to have been cured, an appallingly low percentage of cures. He does not say all these cases were operated on by the incision method, yet, it is safe to infer as much, since it is practically the universal one employed in the treatment of this disease. This large percentage of failures was due, doubtless, in a large number of cases to faulty technic or a lack of knowledge of the character of the fistulous tracts: very important points to comprehend in the intelligent treatment of fistula.

Many of the unsuccessful cases operated on by this method have been attributed to the overlooking of some sinus or tract, or, to the failure to

* Read before the Twelfth Annual Session of the American Proctologic Society at St. Louis, Mo., June 6 and 7, 1910.

make Salmon's "back cut." Each of these omissions may be responsible for an occasional failure, yet, to my mind there are other and perhaps more important reasons for these failures.

(b) Incontinence: incontinence of feces to a greater or less degree frequently forms another distressing and loathsome sequel.

(c) Expense and length of time for recovery: The time of recovery may extend, and often does, over a period of many weeks, making it expensive and necessitating care and attention and the use of undesirable and painful dressings. The individual is compelled, therefore, to lose time from his work and forego society engagements.

(d) Cosmetics: The cosmetic effects are generally bad, leaving scars, sulci and irregularities about the anus. In some instances this makes it almost impossible to maintain a respectable toilet.

Notwithstanding these and other objections that might be mentioned, this method is, has been, and will be the one most generally used for some time to come.

2. *The Injection of Bismuth Paste.*—My attention was first directed to the use of bismuth vaselin paste by my colleague and friend, Dr. Emil G. Beck, who discovered it. The results obtained by him in the treatment of chronic sinuses and fistulas led me to try it in the treatment of rectal fistula. Dr. Beck had used it more especially in the treatment of sinuses and fistulas in other parts of the body. My results in the first seventeen cases seemed marvelous, 75 per cent. apparently cured. Later I found it necessary to operate on two of the cases that I had counted in my list as cured. This reduced my percentage in the seventeen cases to about 65 per cent. This method of treatment looked so promising that I hastened to make it known that others might enjoy the same benefit. Later results were not so favorable. I hope that Dr. Beck, in his discussion of my paper, will not fail to explain this discrepancy. I see in one of his articles that Dr. Baer, of Baltimore, had a similar experience. He treated two series of cases at two different hospitals; all of his cured cases were treated at the Union Protestant Infirmary. While at the Johns Hopkins Hospital he and Dr. Kennard could not obtain a single cure. Strange, isn't it? This difference in results is attributed to the way in which hydrolysis of subnitrate of bismuth of different manufacturers takes place at the body temperature. Dr. Baer has advanced the theory that the subnitrate is hydrolyzed by the heat of the body and free nitric acid is given off, which is probably the curative agent.

Formerly I treated all of my fistula cases with the paste: now I select them and am having better results. I can now generally tell after one, two or three treatments with the paste whether it will do any good to continue. The paste consists of one part of bismuth subnitrate and two parts of sterile vaselin. *Technic:* This is very important. To treat a rectal fistula the paste is liquefied by heating in a water bath and injected into one of the openings with either a glass or metal syringe. The other opening or openings are kept closed by an assistant while the injection is being made. Enough force is used until one feels reasonably sure that all tracts and diverticuli have been filled. The paste rapidly

congeals. If necessary an ice pack may be applied for a few minutes over the injected field. If too much tension is used the paste may be forced into some line of cleavage, then carried along this line to some distant organ or healthy tissue and deposited there with deleterious results. I know this from experience.

3. *Excision or Incision with Immediate Suture* (Proctorrhaphy).—This is the most rational of all surgical procedures for the treatment of rectal fistula when it can be employed.

Technic: Dissect and remove the entire tract when a probe or director can be passed through the fistulous channel and into the rectum. Then search and remove any diverticuli or tracts connected with the main tract. If this cannot, or should not be done, then incise the fistula and dissect out all granulation tissue. If needs be the wound is disinfected with carbolic acid and alcohol. The incision is then ready to be closed.

Suturing: Be sure that all bleeding is controlled before closing the wound, otherwise a hematoma may form and prolong, if not defeat, the operation. Suturing the wound is sometimes very difficult to accomplish and often requires much ingenuity. It may be done by Lembertizing the line of incision from its termination within the rectum to the anus. The ends of the severed sphincters, as well as the deeper portions of the incision, are brought together next with interrupted buried cat gut sutures. The final suturing of the skin and fascia is done with interrupted silk-worm gut.

After the wound is closed do not attempt any fancy stunts, such as pulling the mucous membrane down over the wound and stitching it to the skin; or, covering the line of sutures with a collodion dressing. Dress the wound with iodoform or plain gauze and apply a T bandage. At the end of three or four days give the patient an injection of three or four ounces of olive oil and follow in six or eight hours with another consisting of a pint and a half of water, in which 30 or 40 grains of inspissated oxgall have been dissolved.

The mucous membrane, sphincters and some of the deeper structures may be closed and a drain inserted in those extensive complicated cases where distal and vital organs or structures are involved, or where there is doubt about having removed all of the sinuses. After union occurs between these tissues you will observe that you have an external rectal sinus in lieu of a fistula with which to contend. This sinus may be closed with the paste since the stercoral source of infection is shut off.

Proctorrhaphy or the paste or a combination of the two seem to offer the nearest approach we have to the ideal method of treating extensive and complicated cases of rectal fistula. The opening into the rectum being closed by proctorrhaphy—and practically all such openings can be closed by this means—the fistula is converted into a rectal sinus. The internal source of infection now being shut off the odds are in our favor for closing the sinus with the paste; and this, too, without loss of control

over the bowels, and without scars, sulei or irregularities of the anus. In fact, the cosmetic and physiologic effects of the rectum and anus remain practically perfect.

103 State Street.

HYSTERECTOMY AS A CONSERVATIVE PROCEDURE.

HOWARD CRUTCHER, M.D.

Formerly Instructor of Surgery in the University of Illinois; Formerly Consulting Surgeon of the Chicago & Alton Railroad.

ROSWELL, N. M.

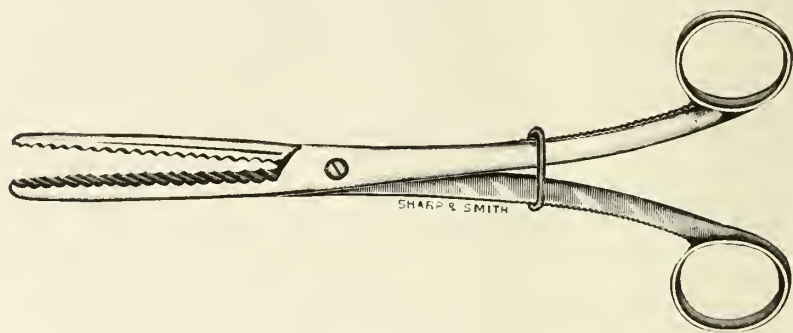
For something like fifteen years I have advocated and practiced what I may here call conservative hysterectomy. By this term I mean the prompt removal of a useless organ, after its uselessness has been demonstrated, the moment that it becomes the source of danger to bodily health. Many a useless uterus travels along its course from the cradle to the grave without becoming a menace to health or life, and there can be no surgical justification for attacking such an organ.

There is, unfortunately, no great hope in any case that can be demonstrated as uterine malignancy. When cancer arrives at the stage of clinical demonstration, the case is practically hopeless, although much may be done in the line of palliation. In the present state of our knowledge malignant disease is one thing that must be dealt with about as the civil officers deal with what are known as "suspicious characters." Some civil as well as surgical blunders will doubtless be made, but the wisdom of this principle of action cannot be questioned. The objection is sometimes raised that the principle of treating all suspicious growths by the radical method will bring about a number of unnecessary operations. I grant that this is true, but it may be said in extenuation that such cases almost invariably recover, whereas a policy of delay is as certainly fatal.

What I desire to emphasize is that I would not by any means limit the operation of hysterectomy to cases of suspected malignancy. Any uterus that is both useless and troublesome ought, in the absence of contraindications, to be removed before it becomes the seat of danger. Let it be distinctly understood that a womb that is merely useless, and not troublesome, should be left alone, since there is nothing to attract attention to it.

Many lacerations of the uterus received during childbirth are not confined to the cervix by any means, but often extend far into the broad ligaments, and such conditions are incurable by ordinary means. Women with such lacerations are "always sick, with nothing the matter." They linger from year to year, always complaining, often in bed, never really "seeing a well day." Repeated curettements do no good, and a repair of the cervix is useless, since it falls far short of reaching the whole trouble. The fact is that such organs are damaged beyond hope of repair, and whilst they may never become the focus of cancer, it is certain that many of them keep their possessors in a state of chronic ill health, from which nothing short of complete removal will relieve them.

Since my removal to New Mexico, two years ago, I have in association with Dr. Galloway operated myself or been the assistant to him in sixteen vaginal hysterectomies. There has been no operative death in the series, although one patient died from fulminating appendicitis after recovery from the hysterectomy. Not one of these operations has been performed for demonstrated malignancy. Growing myomata, immense lacerations involving the broad ligaments, and incurable cases of prolapsus make up the list. One woman, aged 35, went into convulsions at every menstrual period. Inordinate doses of morphin were required to relieve her sufferings. A vaginal hysterectomy raised her from a condition of chronic invalidism to almost perfect health within the space of a few months. A woman of 28, pregnant ten weeks, with pernicious vomiting, acute pulmonary tuberculosis, and complete retroversion, upon whom we made repeated efforts to empty the uterus without result, was not only relieved but cured by a vaginal hysterectomy. But it is not my present purpose to dwell upon the special indications for hysterectomy, which are familiar enough to experienced surgeons. The operation having been decided upon, how shall it be performed?



In spite of the condemnation of some eminent men, I know of no safer, quicker, cleaner method than applying clamps to the broad ligaments, and cutting away the intervening tissues. This method has many advantages, and, so far as I am aware, the objections raised against it are more imaginary than real. In seventy vaginal hysterectomies I have no operative death to record, although I must say that I know of no single case of cure in malignant disease. In the absence of complete records, my recollection is that all the cancers returned, in one form or another, within months or years after the operation. The clamp operation may be performed more quickly, and, as I believe, more safely, in the hands of the ordinary operator than by any other means. A hundred men can apply a clamp with safety where one can attach a ligature under strained conditions to the broad ligament. Some of the bungling procedures, whereby the vaginal outlet is obliterated by a mass of polished hardware, are enough to disgust any experienced surgeon, but any number of clamps left in this position are less dangerous to life than one ligature improperly applied. The proper application of a ligature in the open is no trifling performance; many great surgeons believe that this one act

is the supreme test of surgical skill; but the tying of an important bloodvessel in a cramped situation is something that few men may with safety be trusted to do well.

Sir Frederick Treves, in his latest work, condemns the clamp with a classical sneer, and yet places the operative mortality of vaginal hysterectomy between 5 and 10 per cent., presumably cases treated by the ligature method. Certainly this estimate is too low. In the first place, it must be borne in mind that experimenting bunglers seldom or never report their deaths, and they are precisely the men who imitate with unflinching devotion the methods set down and practiced by such men as Howard Kelly and Frederick Treves. The audacious bungler attempting to carry out some classical procedure of a great operator always makes a sorry spectacle of himself and too often a well appearing corpse of his late patient. The application of a ligature to the uterine artery is no easy performance even in the hands of Howard Kelly, which fact is well known to Howard Kelly, and is but faintly appreciated by some of his clumsy imitators.

The application of a hemostatic clamp to the broad ligament should be the cool, deliberate act of a skillful surgeon, and not the snappy, hysterical performance of some nervous woman sewing on a button. Time is an essential feature. The blades of the instrument must take an even and secure hold, under firm pressure, and the lock fastened when it is clear that all is safe and perfectly secure. In any event, a safe margin must be left for the unavoidable shrinking of tissue, after the structures are cut away. A clamp applied with care and skill will never slip.

It is with some hesitation, in this connection, that I refer to the clamp that I had the honor to present to the profession through *The Medical Record* for February 29, 1896. This lock, so far as I know, was original with me, and consists simply in a steel ring which slides over serrated shanks. I have since modified the handle of this clamp, but the principle of the lock is so elementary that I see no practicable means of improving it.

My belief is that conservative hysterectomy through the vaginal route will in the future become an every-day procedure, performed always with proper regard for rightful surgical principles. Last of all, do I advocate any general campaign of promiscuous cutting and slashing upon the part of ambitious occasional operators, who had better leave their prospective victims to the devices of Nature, pure and undefiled. The ravages of disease are very serious, but they are milder than the mangling performances of bungling upstarts who suddenly awake to find themselves "surgeons." Any serious surgical procedure that cannot be performed with reasonable skill had better be left undone. The blunders of Nature ought not to be aggravated by the bungling of man.

ILLINOIS MEDICAL JOURNAL

THE OFFICIAL ORGAN OF THE ILLINOIS STATE MEDICAL SOCIETY

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SEPTEMBER, 1910

THE POLITICAL SITUATION IN ILLINOIS.

Probably all our readers know that the citizens of Illinois have seemingly awakened to the seriousness of the political situation. Possibly many of them do not realize that the medical men are fully awake on this matter. From all parts of the state come evidences of activity on the part of the doctors, and as a result, the politicians are taking notice. They will pay some attention to the reasonable demands of the medical profession. We cannot too heartily commend the activity of our members.

First, we will mention the circular which is being sent by the Legislative Committee of the State Society, to every candidate for office at the primaries which will be held September 15, and we call attention to the responses which have been received, and are printed in this issue of the JOURNAL.

The Chicago dailies have commented on the work of the State Legislative Committee, and undoubtedly the circular of the committee will be a great help in preventing hostile legislation at the next session. In the Thirty-sixth Legislative District, composed of Pike, Adams, Calhoun and Scott counties, a committee has issued a circular which attacks two

candidates openly; these are Mr. Groves, of Camp Point, and Mr. Bolin, of Milton. Both of them voted for the osteopathic bill, and it is said Mr. Groves "played double." In Sangamon County, Dr. J. M. Bell, of Rochester, is making an active canvas for the lower house, with prospects of success. He is all right and should receive the support of every physician in Sangamon and Morgan counties. Mr. H. M. Wilson, of Springfield, had a good record in the last House. Elmer A. Perry, of Springfield, is charged with being attorney in many of the malpractice suits against physicians.

Dr. J. M. Allison, of Essex, again is a candidate and will probably be nominated.

Dr. M. B. Foster, of Olney, is again candidate for the nomination to Congress, and it is to be hoped he will be successful in this, as in past campaigns.

Dr. J. A. Wheeler, of Auburn, is a candidate for membership of the Republican State Central Committee.

There may be many other physicians running for office, whom we do not know. It appears that the medical interests of Illinois will be better looked after this year than ever before. Everyone familiar with the subject knows that a critical condition exists, which demands radical treatment. Let the county societies get busy and make their influence felt. Maybe then we can get some consideration at the hands of the people "high up."

CARNEGIE REPORT.

In this issue we are presenting further extracts from the columns of the various state journals, which almost without exception speak in favorable terms of the Carnegie Report. An exception to this rule is the attitude of the New York State *Journal of Medicine*. What excuse can be offered for the attitude of this journal we cannot imagine. The *Medical Standard*, of Chicago, published by J. E. Engelhardt & Co., whose columns reek with the advertisements of such proprietaries as Antikamnia, Neurosine, Pepto-Mangan, Papine, Tongaline, and many others, and which for several years has been a consistent supporter of the Illinois State Board of Health, devotes two columns which smack a great deal of the language of one of the members of the State Board.

We would pay little attention to the attitude of the *Standard*, were it not that it has been quoted as representing a considerable portion of the sentiment of the profession. The fact is that while the *Standard* contains much good material in its news columns, its editorial columns have not been such as to commend it to the better class of the medical readers and should not be considered as at all representing deliberate professional conclusions.

It will thus be seen that the Carnegie Report has received the endorsement of nearly every respectable medical journal. And the few exceptions may prove the rule that no matter how excellent a report it might be, it would receive some condemnation.

REPORT OF THE CARNEGIE FOUNDATION.

[From the West Virginia Medical Journal.]

That the author is not a physician does not lessen the value of the report or impair the wisdom of its conclusions, since, as has been said, it represents a study, not of "medicine in relation to teaching but of teaching in relation to medicine." Is medicine properly and efficiently taught, and if not, what changes in methods of teaching and in equipment are needed to bring us up to the level of the leading European nations? These are the problems for the solution of the Foundation, and as Mr. Flexner is an educator, and familiar with the many problems set before the schools and colleges, he is well qualified to undertake the work, whose completion we have in this thorough and clear presentation of conditions as they exist in the medical schools of this country and Canada. It is worthy of note that the findings are very similar to those presented in the several reports of the Council on Medical Education of the American Medical Association, whose efforts have resulted in great improvements in our medical schools in the past few years, thirty of the poorer schools having gone out of existence in the past five years.

That there has been an immense overproduction of physicians in the past; that very many of these were poorly equipped by lack of preliminary education and by indifferent medical teaching; that the public fails to discriminate between the well and the poorly equipped physician, and that as a result the sick are not served as well as they should be, are facts well known to physicians. That many medical schools have existed and still do exist solely for the profit directly and indirectly of the teacher, is a fact also well known, and this report points out very plainly a number of such schools and shows wherein they are defective. It is not surprising that the instructors in such schools do not like this report, and that one school has even entered a suit against the Foundation. If pushed in the courts the suit will serve the excellent purpose of having the defects of at least one indifferent medical school plainly shown to the public whose interests must ever be the first consideration.

The Carnegie Foundation Report is a most notable and valuable publication.

S. L. JEPSON.

MEDICAL LIBRARY AT LA SALLE.

F. W. Matthiessen, former mayor and wealthy manufacturer of La Salle, has given the sum of \$10,000 for a medical library in that city. The interest of this amount approximates to \$500 annually, which will be used for the purchase of medical books and journals. A committee of medical men from La Salle, Peru and Oglesby, adjoining cities, have selected the first lot of books. Mr. Matthiessen's timely gift is much appreciated by the medical men of the neighborhood, and his example will be followed by wealthy men in other cities. On the other hand we hope that the medical men will show their appreciation of his munificence by perfecting themselves in the knowledge of medical science.

AMERICAN ASSOCIATION OF CLINICAL RESEARCH.

The American Association of Clinical Research, of which E. Stillman Bailey, of Chicago, is the president, and James Krauss, of Boston, 419 Boylston Street, is secretary, announces its second annual meeting in Boston, September 28, 1910.

Some very valuable contributions on Researches in Medicine and Surgery, in Prophylactic and Anaphylactic Medicine, in Mental Medicine, in Radiotherapeutics, in Metabolism, etc., are promised.

There will also be a public meeting. The cause of the Association, to secure the true facts and principles of medicine and to advance medicine on the basis of truth and not of whim, is the cause of every true physician. Every physician is most cordially invited to become a member. Applications and program will be forwarded on request.

Although most of the officers of the Association are homeopaths the object of it as announced seems laudable and we hope the members "will arrive."

CARNEGIE FOUNDATION.

[From the Journal of the New Jersey State Medical Society.]

We believe they give us substantially correct facts concerning them—facts which show faulty conditions in many of these schools which far exceed what we have believed—and the conclusions which these able and careful investigators have drawn from these facts will convince every intelligent physician that there is imperative need of radical measures which will bring the majority of these schools up to the acceptable and proper standard, or close their doors.

[From the Pennsylvania Medical Journal.]

It so happens that the question has been studied both by the commission of the Foundation, who represent the pedagogic view freed from sentiment for any of the so-called "sects" in medicine and from the intraprofessional interests of the practitioner; and by the Council on Medical Education of the American Medical Association who, about the same time that the report of the Foundation was issued, presented to the Saint Louis meeting of the American Medical Association the opinion of medical men who have given the question a careful consideration. It is gratifying that these two reports are so much in accord, and it is a good omen that public interest has been aroused to comment upon the investigation by a student of social conditions contained in this report to the Carnegie Foundation.

The situation is the same here as elsewhere. The best medical education costs more than the student can be asked to pay. If you want the best the alternatives are State Aid or Endowment, for to do nothing, to stand still when the rest of the world is advancing is to fall behind.

We do not feel called upon to sit in judgment upon the Milwaukee schools. They have undoubtedly done the best they could with the means at their disposal. All will agree, however, that one strong medical school in Wisconsin would be better than three competing schools.

THE CARNEGIE REPORT AND MEDICAL EDUCATION IN WISCONSIN.

[From the Wisconsin Medical Journal.]

While the ultimate effect of this report cannot now be even guessed at, its immediate action has been so stimulating that it must be considered one of the most important medical publications of the last decade. The fact is well established that an overproduction of physicians is going on. Medicine to-day

exists as a developed science to such an extent that in the four years devoted to its acquisition no time ought to be spared for the introductory work which is needed for its comprehension. Good medical education is cheaper in the end than poor medical education. But how good shall it be? No school can teach all there is to learn in medicine. The question becomes, at what stage in this process of education is it safe and is it economical to give the student his degree?

An examination of the statistics presented shows an existing laxity in regard to the entrance requirements which is continued by the rivalry of schools dependent upon fees for their support.

With the development of laboratory teaching the cost of giving anything like a good training in medicine has increased tremendously. With this increase in cost has come to a majority of the schools in all sections the necessity for enlarging the revenue by securing more students. To secure them in the face of strong competition with other institutions similarly situated, the fitness of the student and his preparation for undertaking the work have received scant consideration.

To hasten on to the practical bearing of this report on our problems in Wisconsin. Of the three schools, the two in Milwaukee are looked upon by the author of the report as being inadequate while the half school at the University is highly commended. There is no need of our feelings being hurt about the treatment of the Milwaukee schools; the report is no more severe in its condemnation of them than it is of scores of others in the class of schools dependent on fees for support. But in the opinion of the author of the report schools of this class belong to the past and not to the future.

We are not surprised that the reports of the A. M. A. Council and Carnegie Foundation produced, on their presentation, a profound sensation and immediately stirred up a bitter antagonism. The unfortunate thing for most of the objectors is that they expressed their judgment and took action hastily, before they had time to carefully read and digest the reports, form sound judgment and act wisely. It is reported that one of the St. Louis medical schools has commenced suit against the A. M. A. and also against the Carnegie Foundation for \$100,000 damages. We are inclined to regard this as a helpful incident in the discussion and settlement of this question, because it will serve to awaken public interest in this controversy, and such interest is needed, as the public at large is far more vitally concerned than the medical profession.

There is little doubt that thirty or forty first-class medical schools with adequate laboratory, dispensary and hospital equipment, scattered throughout the United States, at accessible points, would be sufficient to supply all the physicians that are needed.

One of the most puerile arguments we have heard against the conclusions of these reports of the American Medical Association Council and Carnegie Foundation, is the one which really means that the closing of some of the smaller medical schools which have defective equipments and teaching methods, and whose fees are smaller, is against the interests of the "poor boy" who wishes to study medicine and who cannot afford the greater expenses of the better class of university medical schools.

We insist that the poor boy, or any other boy who decides to study medicine now, ought to have the most thorough education and training that the best medical college can give him. The rapid progress we are

making in the knowledge and practice of scientific medicine, and the fact we are educating the public to appreciate and demand thoroughness in medical education, require it.

Correspondence

DR. STUBBS WRITES AGAIN.

CHICAGO, August 16, 1910.

"There are none so blind as those who will not see."

To the Editor:—I have just received the JOURNAL for August, 1910. Good JOURNAL. It contains good "stuff." There is always something to criticize in a journal of the character of the ILLINOIS MEDICAL JOURNAL. If there were not it would not speak well for the JOURNAL.

Now, my dear Doctor, you are a good editor and conduct your JOURNAL in a remarkably good manner, equal to any journal in this great country. But sometimes you let your personal bias warp your judgment.

I note in the current issue of said JOURNAL, you say on page 238, to wit: "We notice this only to state the fact that the best legal authority has given an opinion; that when Dr. Collins announced that the vote on adjournment was in the affirmative the society stood adjourned; it was absolutely unnecessary for him to make any announcement or declaration whatsoever."

Who is this high authority who overrides every fundamental rule established to govern deliberating bodies since the beginning of organized governments?

I beg leave to differ with you; in fact I do most emphatically differ with your "ipse dixit." You are a good editor, a good doctor, but the average physician is a mighty poor parliamentarian and I think you must be classed among the number.

I too have consulted high, very high authorities on rules governing deliberative bodies. Roberts' Rules of Order, I think, are pretty good; yes, very good; best there is; the one that governs all high legislative bodies, national and state conventions, and his opinion is good enough for the Illinois State Medical Society.

Please get a copy, and turn to page 192, section 63, and you will find the following, if your eyesight fail not: "The motion being received (i. e., to adjourn) the chairman instantly puts the question, as it allows of no debate or amendment, and if decided in the affirmative he says, 'The motion is carried; *this Assembly stands adjourned.*'" Please read up, Doctor: "*error est humanum.*" Again, a motion to adjourn is *not always in order*. You, Dr. Harris, and all "stand patters" to the contrary

notwithstanding, now take note: "The motion to adjourn cannot be made when another has been put, and the assembly is engaged in voting, but it is in order before the vote has been taken and before it has been announced." See Roberts' Rules of Order, page 39. My dear Doctor, please read the above; analyze them; criticize them as you will and satisfy yourself as to the correctness of my position.

Before a vote is decided any legal member of the assembly has a right to call for a division by a rising vote, ayes or naves; or by a roll call.

This is not called in question by the veriest tyro in Rules of Order, and no presiding officer has the right or temerity to deny it, excepting Cannon or Sherman or Shurtleff, and we do not accept them as authority.

A vote is not a vote, a deciding vote, until all means have been granted to any member to cast his ballot or vote so that it is counted as he indicates. Now, then, in the House of Delegates of the Illinois State Medical Society at Danville, Dr. Lydston's resolutions were being discussed, and while a delegate (and I think it was Dr. Lydston) had the floor and was talking on the resolutions, a motion to adjourn was made and the acting president, Dr. Collins, put the motion. This was illegal. See Roberts' Rules of Order, page 39, again. I have consulted individuals of high authority in legal and political circles, men who have time and again acted as chairman in large political assemblies, and they invariably say the officiating officer must say the meeting, assembly or council stands adjourned, or is adjourned, to make it strictly technically legal and binding.

My dear Doctor, please give this the same publicity as you have your "ipse dixit" in the JOURNAL, on page 238, and believe me, as ever,

Yours, fraternally,

JAMES E. STUBBS, M.D.,

Second Vice-President, I. S. M. S.

MORE ABOUT DANVILLE MEETING

To the Editor:—In your issue of June 4, 1910, appears a letter from Dr. E. W. Weis, secretary of the Illinois State Medical Society, in which he states that the American Medical Association reform resolutions presented by Dr. G. Frank Lydston at the late meeting of the society were not regularly adopted. The undersigned, who were present at the meeting after the attempted adjournment, beg leave to submit the following:

Copies of the resolutions were mailed for publication to both the *Journal of the American Medical Association* and the ILLINOIS MEDICAL JOURNAL several weeks before the meeting and copies were freely distributed at the meeting. Thus it is demonstrated that there was no intention to spring them upon the society without warning and oppor-

tunity for due consideration. The subsequent history of the resolutions was a succession of endeavors by partisan officials to abrogate the right of free speech, and showed an intolerance on the part of various servants of the society which is contrary to the spirit in which our medical organizations were founded.

At the opening session of the House of Delegates a motion prevailed to "refer all resolutions which may be submitted to this body during the present session" to a committee of five appointed by the chair. The members of this committee were at once read from a list already prepared for the occasion. A motion then was carried to omit the second day's session of the House of Delegates.

The motive of the foregoing proceedings was recognized by everybody. The motion to refer all resolutions to a committee was afterwards rescinded when it was found to interfere with a resolution which one of the opponents of free speech himself wished to introduce. Therefore Dr. Lydston also had the chance to read his resolutions. A motion to table was made and lost on a roll-call. Before the motion to adopt could be put a motion to adjourn was made, for the self-evident purpose of preventing the adoption of the resolutions as read, which, with the then prevailing spirit of fairness of the House, would inevitably have occurred. The Chairman called for ayes and noes and, by what auditory and mental processes it would be difficult to determine, declared, "The ayes have it." At once Dr. Lydston called for a roll-call and was supported by a large number of delegates. The Chair refused and a large number of delegates left the hall. The claim that the Chair had declared the meeting adjourned was disproved by the official stenographer, who, on being appealed to, stated that his notes contained no such declaration. Dr. Collins then vacated the chair against protests and therefore the second vice-president, Dr. James E. Stubbs, was called to the chair. The resolutions were adopted in regular form and other important business was transacted. Dr. Weis made a claim of no quorum and proceeded to count the delegates. He counted nineteen who were standing and refused to count others, on demand, who were in the hall but declined to stand. The count by delegates badges made by many of the undersigned and others varied from twenty-three to twenty-five. The Chairman of the Medico-Legal Committee came in during the proceedings, and, according to the Secretary's own figures, made the number present at least twenty, the legal quorum. The Chairman, the only legal authority to decide on a quorum, declared a quorum present and the House of Delegates in due and regular session.

It is our earnest hope that it will not be necessary to resort to legal proceedings to establish the rights of those who participated in the passage of the resolutions. It is also our earnest hope that the right of every member of our medical societies to be heard upon any question

bearing on the interests of our organizations will eventually be recognized as the essence of true democracy.

Very respectfully,

Henry F. Lewis.	W. A. Barr, Delegate.
James E. Stubbs, Delegate.	C. E. Humiston, Delegate.
C. B. King, Delegate.	G. Frank Lydston, Delegate.
George F. Butler, Delegate.	Ralph H. Wheeler, Delegate.
E. M. Webster, Delegate.	J. H. Edgecomb, Delegate.
A. W. McLaughlin, Delegate.	Effie L. Lobdell.
A. R. Johnstone, Alternate.	George Bell, Delegate.
C. S. Nelson, Delegate.	Charles R. Moore, Delegate.
C. D. Pence, Delegate.	Bismarck von Wedelstaedt, Alter.
M. G. McHugh, Delegate.	J. W. Vanderslice, Delegate.
J. E. Waggoner, Delegate.	Anna M. Dwyer, Delegate.
Alice Conklin, Delegate.	K. A. Zurawski, Delegate.
James A. Egan.	Wm. L. Ballenger.

THE LEGISLATIVE SITUATION.

The legislative committee of the State Medical Society sent to every candidate for the State Legislature for the coming session a letter outlining the general attitude of the profession along medical legislative lines. This was done in order that there might be no misunderstanding between the profession and members of the Legislature after the session convenes. With the letter was inclosed a return postal with the following pledge written thereon:

If elected to the Illinois Legislature I will do my utmost to maintain one standard for all practitioners of medicine and will use my influence to defeat any legislation the object of which is to permit any cult to practice medicine at a standard of medical education lower than those already in the field under the pretext that its followers are not practicing medicine. I shall at all times support medical legislation which is in the interest of the people of the State and not for the interest of any special cult or school of practice. I shall vote to retain, in Illinois, a one board supervision over all medical matters, including the examination of candidates for practice. That the examination be for all alike, whether they belong to the now recognized schools of medicine or have tacked onto their names some "path," "cult" or "ism."

I will use my best efforts to help amend the medical practice act so as to give the State Board of Health supervision over all medical licenses issued by the State of Illinois.

Candidate from the.....District.

.....

.....

The committee submits the character of replies. S before the name of the legislator denotes that the pledge was signed and is satisfactory; E, that the answer was evasive; R, that he refused to sign; and blank before the name indicates that no reply had been received up to the time of going to press. As the time between mailing the letters and going to

press of the JOURNAL has been rather short, no doubt many pledges will be received after the forms are closed, but as eternal vigilance is the motto of the profession from now on, it behooves the candidates to act more promptly in the future.

A number of candidates are up for re-election and the way they voted at the last session on Bill 351 is indicated by the letters after their names. F after the name of the legislator denotes voting for the bill. A denotes voting against the bill and N. V. denotes not voting. This bill, if enacted, would have conferred upon the graduates of certain osteopathic schools all the rights and privileges of physicians and surgeons and would require the State Board of Health to license without examination all such osteopaths as graduated previous to July 1, 1909.

FIRST DISTRICT.—The First and Second Wards in the City of Chicago.

MEMBERS OF THE GENERAL ASSEMBLY

Republican—	
Senate.....S—	Francis P. Brady—N. V.....1311 Michigan Ave.
	Hugh Richardson.....3119 Calumet Ave.
	Herbert C. Metcalf.....3239 Rhodes Ave.
House.....	Noble B. Judah, Jr.....2701 Prairie Ave.
	S—Edward D. Green.....125 W. 26th St.
	S—Frank L. Hamilton.....2625 Wabash Ave.
	Alexander Lanc—A.....1937 Archer Ave.
Democratic—	
Senate.....	Edward D. Cooke.....2248 Wabash Ave.
	Richard S. Folsom.....2119 Calumet Ave.
House.....	John Griffin—A.....2020 Indiana Ave.
	Lawrence Burns.....2949 S. Park Ave.
	S—Charles W. Espey.....250 W. 22d St.
Prohibition—	
Senate.....	Stephen F. Welbasky.....3131 5th Ave.
House.....	Geo. Derr Koontz.....2011 Indiana Ave.
Socialist—	
Senate.....	Robt. Kurth.....2923 Cottage Grove Ave.
House.....E—	Axel Gustafson.....1252 Michigan Ave.

SECOND DISTRICT.—The Twentieth Ward and parts of the Eleventh and Twelfth Wards, Chicago.

Republican—	
House.....	David Franklin Doubt.....2126 Ogden Ave.
	S—Roger J. Marcy.....1953 Congress St.
	Frank J. McNichols—N. V.....1103 S. Winchester Ave.
	S—Thomas J. Houston.....228 S. Lincoln St.
	S—William W. Haupt.....1803 Hasting St.
Democratic—	
House.....	Geo. L. McConnell—F.....218 Seeley Ave.
	Philip P. Bregstone.....1020 Ashland Blvd.
Socialist—	
House.....	H. A. Miller.....2309 W. Monroe St.

THIRD DISTRICT.—The Third and parts of the Fourth, Fifth and Sixth Wards, Chicago.

Republican—	
Senate.....	Charles Lederer—A.....3641 Grand Blvd.
	S—Samuel A. Ettelson—F.....3315 Calumet Ave.
	E—Oliver Sollitt—F.....4020 Prairie Ave.
	S—George F. Morgan.....726 E. 42d St.
House.....	William Östrom.....3136 Princeton Ave.
	Kay Wood.....3926 Michigan Ave.
	Frank Aims Marshall.....4206 Ellis Ave.
	S—John G. Jones.....3717 Armour Ave.
	Maurice T. Winkler.....4017 Michigan Ave.
	Alexander MacIntyre.....3531 Princeton Ave.
	William Pettis.....3814 Ellis Ave.
Democratic—	
Senate.....	Jeremiah P. McDonald.....3256 Princeton Ave.
	S—Thor. J. Benson.....3228 Forest Ave.
	James M. Burke.....504 W. 32d St.
	Joseph Friedman.....4101 Grand Blvd.
House.....	John P. Walsh—F.....738 31st St.
	S—Patrick J. Wall.....511 W. 27th St.

	Henry M. Ashton.....	3633 Lake Ave.
	Edward L. J. Dempsey.....	124 W. 33d St.
	S—J. R. Johnson.....	3752 Armour Ave.
Prohibition—		
Senate.....S—	Geo. W. Doolittle.....	3441 Vernon Ave.
House.....	Harold A. Deadman.....	3830 Elmwood Ave.
	Chas. J. Nyman.....	3349 Forest Ave.
Socialist—		
Senate.....	Owen Brown.....	3820 Rhodes Ave.
House.....	Isaac Peterson.....	3914 Ellis Ave.

FOURTH DISTRICT.—The Twenty-Ninth and Thirtieth Wards and part of the
Thirty-First Ward, Chicago.

Republican—		
House.....S—	Thomas A. Boyer.....	4454 Emerald Ave.
	S—John Hrubec.....	1734 W. 51st St.
	S—Daniel J. Nelson.....	508 W. 44th Pl.
	Geo. W. Lambert.....	829 W. 53d Pl.
Democratic—		
House.....S—	George W. Lynch.....	723 W. 54th Pl.
	George C. Hilton.....	5437 Justine St.
	Martin L. Costello.....	447 W. 42d Pl.
	S—Edward Brady.....	503 W. 45th Pl.
	Charles C. Cannon.....	5237 Centre Ave.
	Thomas F. Murphy.....	540 W. 45th Pl.
	S—William Murphy—A.....	4356 Shields Ave.
	Hubert Kilens.....	5026 S. Ashland Ave.
	S—Dan J. Daly.....	5038 Elizabeth St.
	S—Bernard W. Lyons.....	4410 Wentworth Ave.
	George J. Ernst.....	5256 5th Ave.
	Frank Karas.....	4639 Marshfield Ave.
	Michael Doran.....	2559 39th St.
	S—Isaac Miller.....	4159 Western Ave. Blvd.
Socialist—		
House.....	Joseph A. Ambroz.....	2039 W. 51st St.

FIFTH DISTRICT.—Parts of the Sixth and Seventh Wards, Chicago.

Republican—		
Senate.....	Walter Clyde Jones.....	5541 Woodlawn Ave.
House.....	Morton Denison Hull.....	4855 Woodlawn Ave.
	William Tudor ApMadoc—N. V.....	4845 Grand Blvd.
	S—Arthur V. Lee.....	5100 Hibbard Ave.
	S—James Linden.....	4433 Lake Ave.
Democratic—		
Senate.....S—	Percival F. Fullmer.....	5495 Madison Ave.
House.....	Hiram T. Gilbert.....	5234 Woodlawn Ave.
	S—Charles Naylor—F.....	4909 Wabash Ave.
	S—Ignatius Brady.....	704 E. 50th Pl.
Prohibition—		
Senate.....	William H. McWhorter.....	5407 Wabash Ave.
House.....E—	William F. Mulvihill.....	7024 Calumet Ave.
Socialist—		
Senate.....	Robert Waddell.....	5041 State St.
House.....S—	P. G. Soderberg.....	6446 Vincennes Ave.

SIXTH DISTRICT.—The Twenty-Fourth and Twenty-Sixth Wards and parts
of the Twenty-Third and Twenty-Fifth Wards, Chicago, and parts of the
towns of Evanston, Niles and New Trier, all in the County of Cook.

Republican—		
House.....S—	Richard P. Hagan—A.....	4303 Paulina St.
	E—Wesley A. Stanger.....	Evanston.
	Charles E. Finkl.....	910 Willow St.
	S—W. E. Anderson.....	Evanston.
	William F. Zipf.....	4533 Lyman Ave.
	S—Louis Wolff.....	1811 Fremont St.
Democratic—		
House.....S—	Joseph A. Weber.....	1919 Belmont Ave.
	Robert E. Wilson—A.....	4025 Perry St.
	Frank C. Adams.....	2214 Seminary Ave.
	S—James M. Slattery.....	1522 Farwell Ave.
	Frank A. Stadler.....	1312 George St.
	Peter Dienhart.....	1911 Waveland Ave.
	S—Mathias Aller.....	5027 N. Hermitage Ave.
Prohibition—		
House.....	Harry E. N. Stine.....	1947 Cornelia Ave.
	Dudley Grant Hays.....	1641 Estes Ave.
Socialist—		
House.....	Louis W. Hardy.....	3341 N. Leavitt St.

SEVENTH DISTRICT.—The towns of Thornton, Bloom, Rich, Bremen, Orland, Lemont, Palos, Worth, Lyons, Stickney, Proviso, Leyden, Elk Grove, Schaumburg, Hanover, Barrington, Palatine, Wheeling, Northfield, and parts of the towns of New Trier, Niles, Norwood Park and Maine, all in the County of Cook.

Republican—		
Senate.....	S—William H. Maclean—N. V.....	Wilmette.
	John Humphrey—F.....	Orland.
	William W. Loomis.....	La Grange.
House.....	S—Willard A. Warman.....	Melrose Park.
	R—Louis J. Pierson—N. V.....	Wilmette.
	Frederick B. Roos.....	Forest Park.
	Sidney T. Hart.....	Willow Springs.
Democratic—		
House.....	Walter A. Lantz—N. V.....	La Grange.
	S—J. J. O'Rourke.....	Harvey.
	S—Patrick W. Dunne.....	River Forest.
	Charles S. Cole.....	Glenview.
	S—William Cafferty.....	Lemont.
Prohibition—		
Senate.....	J. T. Ford.....	Arlington Heights.
	E. W. Hicks.....	Maywood.
House.....	C. Geo. Fleager.....	La Grange.
Socialist—		
Senate.....	Donald A. McQueeu.....	Harvey.
House.....	Jas. A. Prout.....	Harvey.

EIGHTH DISTRICT.—The Counties of Boone, Lake and McHenry.

Republican—		
House.....	Edward D. Shurtleff—N. V.....	Marengo.
	A. K. Stearns—F.....	Lake Bluff.
	Christian T. Heydecker.....	Waukegan.
	David H. Jackson.....	Lake Forest.
	James H. Vickers.....	Harvard.
Democratic—		
House.....	Charles F. Hayes.....	Harvard.
	Thomas F. Burns—A.....	Belvidere.
	George F. Lynch.....	Libertyville.
	S—Joseph C. James.....	Antioch.
Prohibition—		
House.....	Joseph E. Anderson.....	Lake Forest.
Socialist—		
House.....	Frederick Mains.....	Highland Park.

NINTH DISTRICT.—Parts of the Fourth, Fifth and Twelfth Wards, Chicago.

Republican—		
Senate.....	Andrew Powers.....	3137 Archer Ave.
House.....	S—David E. Shanahan—N. V.....	3434 S. Paulina St.
	S—John J. Fruzyna.....	3043 W. 21st Pl.
	S—Hector A. Brouillet.....	3532 S. California Ave.
Democratic—		
Senate.....	S—Patrick J. Carroll.....	3827 Campbell Ave.
	Oliver McCormick.....	748 W. 35th St.
	S—James J. O'Meara.....	2861 E. Loomis St.
	William Bigane.....	3612 S. Hamilton Ave.
	S—Peter P. Jezleruy.....	2244 Marshall Blvd.
House.....	Edward J. Murphy—F.....	3520 Emerald Ave.
	S—Argess M. Evans.....	2329 W. 35th Pl.
	Robert J. Mulcahy.....	3124 Archer Ave.
	Robert H. Reagen.....	3600 S. Ashland Ave.
	S—Eugene J. Danaher.....	3627 S. Halstead St.
	S—James R. Murphy.....	3641 Wallace St.
	Philip P. Sullivan.....	1600 35th St.
	Paul A. Messenie.....	3310 S. Leavitt St.
	Rudolph Stoklasa.....	2247 S. Kedzie Ave.
	S—Edward F. McGuirl.....	3408 S. Leavitt St.
Prohibition—		
Senate.....	S—Elias S. Lloyd.....	3024 Lloyd Ave.
House.....	S—Otto J. Krampikowsky.....	2642 W. 23d St.
	S—Stewart McDonald.....	3252 S. Irving Ave.
Socialist—		
Senate.....	Chas. Toepper.....	2637 W. 20th St.
House.....	William Cherney.....	2505 S. St. Louis Ave.

TENTH DISTRICT.—The Counties of Ogle and Winnebago.

Republican—		
House.....	John A. Atwood.....	Stillman Valley.
	Alexander Collier.....	Rockford.

	Victor H. Bovey.....	Oregon.
	George F. Tullock.....	Owen.
Democratic—		
House.....	Pike Dernier.....	Oregon.
	S—Mark T. Storen.....	Rockford.
	John Coleman.....	Rochelle.
	Hugh J. Gallagher.....	Rockford.
	James J. Burns.....	Burritt.
Prohibition—		
House.....	Wiley S. Johnson.....	Byron.
	J. M. Woodard.....	Rockford.
Socialist—		
House.....	R. H. Youngburg.....	Rockford.

ELEVENTH DISTRICT.—The Thirty-Second Ward and part of the Thirty-First Ward, Chicago.

Republican—		
Senate.....	Carl Lundburg—A.....	5727 Sangamon St.
	S—William H. Reid.....	5520 Green St.
House.....	Donald H. McGilvray.....	6932 Lowe Ave.
	Henry D. Fulton—F.....	444 Englewood Ave.
	Chester W. Church—F.....	9244 Winchester Ave.
	Amos H. Cooley.....	1717 W. Garfield Blvd.
Democratic—		
Senate.....	Patrick J. Devlin.....	537 W. 62d St.
	Timothy C. Charles.....	5747 Sangamon St.
	W. J. Stennett.....	6334 Center Ave.
House.....	Thomas F. Malone.....	6511 Justine St.
	S—John H. Collins.....	9644 Longwood Ave.
	William Slaven.....	539 W. 61st Pl.
	S—James J. O'Toole—N. V.....	6536 S. Marshfield Ave.
	S—Frank J. Ryan.....	6828 Bishop St.
	Thomas M. Crane.....	1143 W. 63d St.
	S—Thos. J. Moore.....	5741 Peoria St.
Prohibition—		
Senate.....	Harold Rountree.....	7321 Princeton Ave.
	Wm. C. Gibbons.....	7210 S. Peoria St.
House.....	S—Erik A. Erickson.....	7621 S. Sangamon St.
Socialist—		
Senate.....	John D. Dobelman.....	6343 S. Halsted St.
House.....	Paul C. Lorenz.....	6154 Aberdeen St.

TWELFTH DISTRICT.—The Counties of Carroll, Jo Daviess and Stephenson.

Republican—		
House.....	S—W. W. Gillespie—N. V.....	Savanna.
	Stepheu Rigney—N. V.....	Red Oak.
	W. T. Rawleigh.....	Freeport.
	J. J. Shaffer.....	Rock Grove.
Democratic—		
House.....	S—Martin J. Dillon—A.....	Galena.
	S—R. R. Thompson.....	Kent.
	Henry B. Witte.....	Freeport.
	Chas E. Gray.....	Rice.
Prohibition—		
House.....	E—Theodore F. Ellis.....	Winslow.
	J. H. Keagle.....	Cedarville.
Socialist—		
House.....	W. H. McCall.....	Freeport.

THIRTEENTH DISTRICT.—The Eighth and Thirty-third Wards and parts of the Seventh Ward, Chicago, and part of the town of Calumet, all in the County of Cook.

Republican—		
Senate.....	S—Albert C. Clark—F.....	7131 Euclid Ave.
	S—Edward M. Roby.....	10805 Ave. J.
House.....	Benton F. Kleeman—F.....	11444 Prairie Ave.
	John A. Swanson.....	6842 Washington Ave.
	S—Mortimer H. Moore.....	161 E. 111th St.
	S—Charles Deutschmann.....	7107 Langley Ave.
	Oscar Wolff.....	10052 Ewing Ave.
Democratic—		
Senate.....	John Prystalski.....	11037 Curtis Ave.
	S—James Kirby.....	7436 Yates Ave.
House.....	S—M. L. Kensington.....	6307 Woodlawn Ave.
	S—Charles J. Phillips.....	7209 Evans Ave.
	James J. Mulcahey.....	11418 Indiana Ave.
	S—George N. Morgan.....	7646 Marquette Ave.
	S—Carl P. Morgan.....	3203 E. 92d St.
	Timothy Dunne.....	2906 78th St.

1. Mr. Church is responsible for the vicious medical bills in the last two sessions. He should be retired.

Prohibition—		
Senate.....	Perry Kim.....	17 W. 109th St.
House.....	S—George A. Cressey.....	Morgan Park.
Socialist—		
Senate.....	Nels Anderson.....	11640 Yale Ave.
House.....	S—Bernard Berlyn.....	865 E. 63d St.

FOURTEENTH DISTRICT.—The Counties of Kane and Kendall.

Republican—		
House.....	E—Frank W. Shepherd—N. V.....	Elgin.
	S—Isaac Eugene Bennett.....	1431 Newberry Ave. Plano.
	W. M. Mercer.....	Aurora.
	Arwin E. Price—N.V.....	Elgin.
	Frank R. Reid.....	Aurora.
	August L. Anderson.....	Elgin.
Democratic—		
House.....	E—George W. Alschuler—A.....	Aurora
	Edward G. Harvey.....	La Fox.
Prohibition—		
House.....	J. I. Ellsworth.....	Campton.
	O. W. Beebe.....	Yorkville.
Socialist—		
House.....	Theodore F. Klees.....	Aurora.

FIFTEENTH DISTRICT.—Parts of the Ninth, Tenth and Eleventh Wards, Chicago.

Republican—		
Senate.....	S—John M. Sienkiewicz.....	1838 S. Ashland Ave.
	S—James J. Cullen.....	1431 Newberry Ave.
	Robert T. Novak.....	1116 W. 19th Pl.
House.....	S—Thos. Curran—A.....	2023 S. Center Ave.
	Frank J. Karch.....	1722 S. Ashland Ave.
	S—Anthony Novotny.....	1919 Blue Island Ave.
Democratic—		
Senate.....	Edward J. Forst—A.....	1817 S. Ashland Ave.
House.....	S—John O. Hruby, Jr.—A.....	1806 S. Centre Ave.
	S—Peter F. Smith.....	1608 S. Union St.
	S—John W. Riemer.....	1655 W. 18th St.
	Michael Rayspis.....	1942 5th St.
	S—F. W. Rausch.....	1741 W. 19th St.
	S—William J. Laskowski.....	1701 S. Ashland Ave.
	P. C. Daily.....	2037 Canalport Ave.

SIXTEENTH DISTRICT.—The Counties of Livingston, Marshall, Putnam and Woodford.

Republican—		
House.....	Josiah Kerrick—F.....	Minonk.
	S—H. T. Ireland—F.....	Washburn.
	Matthew Van Petten.....	Washburn.
	S—Will L. Talbott.....	Pontiac.
Democratic—		
House.....	Michael Fahy—F.....	Tolna.
	James M. Maguire.....	Campus.
	A. F. Ruddy.....	Blackstone.
	Christian Haase.....	Washburn.
	James W. Tracey.....	Tolna.
	S—E. M. Johnson.....	Pontiac.
	David J. Neuerburg.....	Pontiac.
	S—J. D. Jenkins.....	El Paso.
	S—L. C. Gish.....	Eureka.
Prohibition—		
House.....	Marion Gallup.....	Pontiac.

SEVENTEENTH DISTRICT.—The Nineteenth Ward and parts of the Ninth and Tenth Wards, Chicago.

Republican—		
Senate.....	S—Michael Cataldo.....	949 W. Polk St.
House.....	S—Edward J. Smejkal—A.....	560 Bunker St.
	Charles J. Herman.....	1316 Macalister Pl.
Democratic—		
Senate.....	Edward J. Glackin—F.....	618 S. Morgan St.
	S—Joseph D'andrea.....	817 S. DesPlaines St.
House.....	Emanuel M. Abrahams.....	901 W. 12th St.
	S—John S. Burns.....	622 Blue Island Ave.
	Harry White.....	715 Blue Island Ave.

2. Mr. Hruby, a wheelhorse in the last session, should receive support of every physician.

3. Mr. Smejkal saved the day for the profession at the last session. Every physician must loyally support him.

S—Henry Hogan.....	1019 W. Polk St.
Patrick Morris.....	1122 S. May St.
Tony Trimarco.....	835 Miller St.
Peter F. Galligan—F.....	523 S. Morgan St.
Frank Navigato.....	1057 W. Taylor St.
S—Paul Rissman.....	1256 Washburn Ave.
Socialist—	
Senate.....H. W. Tischer.....	619 Aberdeen St.
House.....A. Dublin.....	1135 S. Halsted St.

EIGHTEENTH DISTRICT.—The County of Peoria.

Republican—	
House.....Lucas I. Butts—F.....	Peoria.
Ira J. Covey.....	Peoria.
S—Henry Ludwig.....	Peoria.
Charles W. Ross.....	Peoria.
S—Henry W. Harding.....	Hanna City.
George E. Green.....	Peoria.
Democratic—	
House.....Thomas N. Gorman—F.....	Peoria.
S—John E. Dempsey.....	Peoria.
S—William F. Peppard.....	Princeville.
Woodson Morgan.....	Peoria.
S—Charles H. Condon.....	Hanna City.
Prohibition—	
House.....George Belford.....	Princeville.
Socialist—	
House.....Samuel Edwards.....	Peoria.

NINETEENTH DISTRICT.—The Thirteenth and Thirty-Fourth Wards and part of the Twelfth Ward, Chicago, the Town of Riverside and part of the town of Cicero, all in the County of Cook.

Republican—	
Senate.....S—Charles E. Cruikshank—F.....	3043 W. Jackson Blvd.
Will C. Moody.....	2934 Warren Ave.
House.....Charles A. Schumacher—N. V.....	4055 W. 26th St.
James M. Kittleman—N. V.....	Berwyn.
S—John Christenson.....	Cicero.
S—Joseph C. Blaha.....	3736 W. 13th St.
Democratic—	
Senate.....Thomas J. Lynch.....	4249 Carroll Ave.
John T. Denvir.....	1847 S. 40th Ave.
John J. Hickey.....	1538 S. Trumbull Ave.
Harry Woods.....	3000 Warren Ave.
Richard B. Considine.....	2703 Jackson Blvd.
House.....John J. McLaughlin—F.....	3105 Washington Blvd.
Edward J. Cassin.....	2458 Millard Ave.
Thomas D. Garry.....	3932 Fillmore St.
Patrick F. Ryan.....	3835 Harvard St.
Joseph A. McInerney.....	4427 West End Ave.
Socialist—	
Senate.....S—Walter Huggins.....	2626 Adams St.
House.....S—W. G. Zoeller.....	1358 41st Ct.

TWENTIETH DISTRICT.—The Counties of Grundy, Iroquois and Kankakee.

Republican—	
House.....Israel Dudgeon—F.....	Morris.
Geo. H. Hamilton—F.....	Watseka.
S—Fred Harford.....	Verona.
Democratic—	
House.....J. W. Allison—A.....	Essex.
R—Frank M. Crangle.....	Watseka.
S—Charles Brown.....	Clifton.
Phil Karcher.....	Herscher.
Prohibition—	
House.....Phillip A. St. John.....	Onarga.
Socialist—	
House.....S—L. E. Miller.....	Onarga.

TWENTY-FIRST DISTRICT.—The Fourteenth Ward and parts of the Seventeenth and Thirty-Fifth Wards, Chicago.

Republican—	
Senate.....William H. Dellenback—F.....	3254 Walnut St.
S—Nicholas Hamel.....	1756 Huron St.
House.....Frederick E. Erickson.....	658 N. Carpenter St.
William F. Galling.....	3414 Franklin Blvd.
Charles J. Ryberg.....	715 N. Ashland Ave.
William H. Troyer—F.....	531 N. Central Park Ave.

	Edward Newman.....	3015 Fulton St.
	Harry J. Cronin.....	2946 Walnut Ave.
	S—Charles G. Dixon.....	1721 Austin Ave.
Democratic—		
Senate.....	Girard A. Ellingson.....	5508 Frink St.
	John E. Madigan.....	334 N. Artesian Ave.
	George W. Baker.....	228 N. Walnut Ave.
House.....	Benjamin M. Mitchell.....	241 N. Sacramento Blvd.
	Thomas J. O'Brien—A.....	527 N. Morgan St.
	Joseph J. White.....	2249 W. Erie St.
	S—William J. Ricer.....	1131 W. Chicago Ave.
Prohibition—		
Senate.....	Albert H. Humphrey.....	179 N. 51st Court.
House.....	John Nelson.....	1336 W. Ohio St.
Socialist—		
Senate.....	Jas. W. Johnston.....	1902 Park Ave.
House.....	H. W. Harris.....	526 N. Avers Ave.

TWENTY-SECOND DISTRICT.—The Counties of Edgar and Vermilion.

Republican—		
House.....	William P. Holaday—F.....	Georgetown.
	J. Ed Thomas.....	Danville.
	Isaac N. Cooley.....	Paris.
	S—R. W. Fisk.....	Ridgefarm.
Democratic—		
House.....	Andrew B. Dennis.....	Danville.
	S—William B. Redden.....	Danville.
Prohibition—		
House.....	S—Clay F. Gaumer.....	Alvin.
Socialist—		
House.....	Peter N. Christenson.....	Grape Creek.

TWENTY-THIRD DISTRICT.—The Fifteenth Ward and parts of the Sixteenth and Thirty-Fifth Wards, Chicago, and part of the town of Cicero, all in the County of Cook.

Republican—		
Senate.....	Niels Juul—N. V.....	2645 Potomac Ave.
House.....	George A. Miller.....	Oak Park.
	Joseph P. Kinsella.....	1345 N. Robey St.
	Christopher Beck—A.....	1510 N. Kedzie Ave.
Democratic—		
Senate.....	Bernard J. Mahony.....	1448 N. Kedzie Ave.
	Clarence W. Shaeffer.....	1314 N. Rockwell St.
	Wm. T. Payne.....	Oak Park.
House.....	Patrick F. Murray—F.....	2649 W. Cornella St.
	Joseph Strauss.....	1252 N. Robey St.
	George R. Bruce.....	1419 N. Ridgeway Ave.
	Isaac A. Doff.....	1346 N. Paulina St.
Socialist—		
Senate.....	John T. Hammersmarck.....	2007 Evergreen Ave.
House.....	C. M. Madsen.....	3328 Beach St.

TWENTY-FOURTH DISTRICT.—The Counties of Champaign, Moultrie and Piatt.

Republican—		
House.....	Charles Adkins.....	Bement.
	S—Seymour Marquiss.....	Monticello.
	Lucas Lambrecht.....	Sullivan.
	Joseph Carter—F.....	Champaign.
	S—Julius N. Rodman.....	Deland.
	S—Levi Seass.....	Arthur.
Democratic—		
House.....	Marion Peters.....	Urbana.
	S—W. E. Stedman.....	Sullivan.
Prohibition—		
House.....	S—L. B. Pickerell.....	Deland.

TWENTY-FIFTH DISTRICT.—The Twenty-Seventh and Twenty-Eighth Wards, Chicago.

Republican—		
Senate.....	Theodore R. Steinert.....	2112 Powell Ave.
	Herman H. Breidt—N. V.....	3050 N. Hamlin Ave.
	Raymond G. Kimbell.....	2500 Smalley Ct.
House.....	Charles L. Fieldstack—F.....	4016 Syracuse Ave.
	Lewis Hutzler—N. V.....	2906 Johnston Ave.
	S—Hubert D. Crocker.....	3947 Irving Park Blvd.

Democratic—	
Senate.....	Peter McGrath.....2245 Homer St.
S—	Peter S. Olson.....2340 Powell Ave.
S—	Samuel B. Freud.....2611 Milwaukee Ave.
S—	Johan Waage.....3823 N. 43d Ave.
House.....	William Hanson.....2457 Moffat St.
	Charles McParland.....5011 Grand Ave.
	Frank C. Burke.....1621 Milwaukee Ave.
	Joseph L. Lisack.....3549 Diversey Ave.
	Frank H. Landmesser.....4542 N. 47th Court.
	George H. VonHollen.....2014 N. Western Ave.
	Chris Jensen.....3834 Sacramento Ave.

Prohibition—	
Senate.....	Ino E. Larson.....2713 N. Whipple St.
House.....	Andrew O. Silversen.....2649 N. Central Park Ave.
Socialist—	
Senate.....	Joseph M. Mason.....3037 N. Spaulding Ave.
House.....	R—Carl Strover.....5642 Higgins Ave.

TWENTY-SIXTH DISTRICT.—The Counties of Ford and McLean.

Republican—	
House.....	E—W. H. Wright—N.V.....McLean.
S—	John A. Montelius—A.....Piper City.
	Soren S. Osman.....Gibson City.
	Seth S. Noble.....Bloomington.
Democratic—	
House.....	D. D. Donahue.....Bloomington.
S—	Walter E. Spooner.....LeRoy.
Prohibition—	
House.....	F. L. Garst.....Stanford.
Socialist—	
House.....	James M. Benuington.....Bloomington.

TWENTY-SEVENTH DISTRICT.—The Eighteenth Ward and parts of the Sixteenth and Seventeenth Wards, Chicago.

Republican—	
Senate.....	S—T. B. Scouten.....1438 Madison St.
House.....	Leland Berz.....1022 Jackson Blvd.
	Albert Rostenkowski.....1261 Noble St.
Democratic—	
Senate.....	John Broderick—F.....122 Aberdeen St.
	Michael F. Sullivan.....21 N. Ashland Blvd.
	Joseph F. Helminiak.....1203 Milwaukee Ave.
	Scott O. Cavette.....1419 Emma St.
House.....	Robert J. Collins.....855 W. Randolph St.
	Daniel J. Sullivan.....823 Jackson Blvd.
S—	Henry Lynch.....220 Aberdeen St.
	Anton J. Onceki.....906 Milwaukee Ave.
	Joseph Pitlock.....1308 Crittenden St.
	Teofil Weyna.....1020 Milwaukee Ave.
	Max Lewandowski.....669 Milwaukee Ave.
	William Wreschinsky.....1535 W. Division St.
	Salvatore Romauro.....816 W. Ohio St.
Prohibition—	
Senate.....	Charles H. Mortimer.....121 N. May St.
House.....	Edward Horth.....1528 Holt Ave.
Socialist—	
Senate.....	S—Edward Harris.....122 N. Elizabeth St.
House.....	Emil A. Hannenberg.....616 W. Madison St.

TWENTY-EIGHTH DISTRICT.—The Counties of DeWitt, Logan and Macon.

Republican—	
House.....	Edwin C. Perkins—F.....Lincoln.
	John R. Robinson—N. V.....Farmer City.
	B. R. Behrends.....Hartsburg.
	Thomas N. Leavitt.....Maroa.
Democratic—	
House.....	Moses A. Nickey.....Oakley.
	S. J. Woland.....Hartsburg.
S—	Edward F. L. Rautenberg.....Lincoln.
S—	Willis R. Shaw.....Decatur.
	Cyrus J. Tucker.....Warrensburg.
Prohibition—	
House.....	James S. Stevenson.....Decatur, R. F. D. No. 7.

TWENTY-NINTH DISTRICT.—Parts of the Twenty-First and Twenty-Second Wards, Chicago.

Republican—	
Senate.....	Samuel E. Erickson.....352 Locust St.
House.....	S—Charles A. Nelson.....201 Hill St.
	Robert H. McCormick, Jr.....648 Cass St.
S—	James F. Burns.....1131 N. Franklin St.

Democratic—	
Senate.....	John M. O'Connor.....1043 Rush St.
	S—Thomas E. Gavin.....820 LaSalle Ave.
	James M. Hayes.....149 W. Chicago Ave.
	Thomas Martin.....543 Dearborn Ave.
House.....	S—John R. Durso.....1012 Milton Ave.
	S—James H. Farrell.....1147 Wells St.
	S—Patrick H. O'Toole.....27 W. Ohio St.
	S—George N. Diederich.....229 W. Division St.
	S—Bernard J. Conlon.....444 Lincoln Park Blvd.
	S—John B. DeVoney.....936 Wells St.
	Patrick J. Sullivan F.....210 Whiting St.
	James F. Sullivan.....836 Dearborn Ave.
	S—Chas. E. Steffen.....1205 LaSalle Ave.
Prohibition—	
Senate.....	A. H. Simpson.....233 E. Huron St.
	J. C. Pickard.....838 N. Clark St.
House.....	L. F. Jeanmene.....233 E. Huron St.
	C. M. Nance.....804 Cass St.
Socialist—	
Senate.....	William Acker.....676 LaSalle Ave.
House.....	T. J. Coveney.....659 W. Division St.

THIRTIETH DISTRICT.—The Counties of Brown, Cass, Mason, Menard, Schuyler and Tazewell.

Republican—	
House.....	Louis Zinger—N. V.....Pekin.
	Homer J. Tice.....Greenview.
	Thomas F. Edwards.....Kilbourne.
Democratic—	
House.....	S—Herman W. Danforth.....Washington.
	A. M. Foster—F.....Rushville.
	Charles J. Skaggs.....Pekin.
	S—Martin W. Greer.....Rushville.
	S—William M. Groves—A.....Petersburg.
	John C. Young.....Kilbourne.
	S—John H. Soldwedel.....Pekin.
Prohibition—	
House.....	S—George W. Warner.....Mackinaw.

THIRTY-FIRST DISTRICT.—Parts of the Twenty-First, Twenty-Second, Twenty-Third and Twenty-Fifth Wards, Chicago.

Republican—	
Senate.....	S—Willett H. Cornwell.....3825 Alta Vista Terrace.
	William A. Burmeister.....1521 Larrabee St.
House.....	S—Chas. E. Erby.....2241 Lincoln Ave.
	Harry L. Shaver.....6347 Winthrop Ave.
	S—Franklin S. Catlin.....451 Belden Ave.
Democratic—	
Senate.....	S—Simon P. Walsh.....2134 Lincoln Pl.
	S—William P. Ellison.....750 W. North Ave.
House.....	S—Henry Dopheide.....2141 Cleveland Ave.
	S—Leland P. Smith.....2738 Florence Ave.
	John C. Werdell—F.....1426 Mohawk St.
	Jacob Levy.....1411 LaSalle Ave.
	Charles J. Frank.....1456 N. Park Ave.
Prohibition—	
Senate.....	John H. Hill.....822 Crescent Pl.
House.....	Barton A. Ulrich.....726 Bitter Sweet Pl.
	Bengt. J. Regnell.....3130 Clifton Ave.
Socialist—	
Senate.....	Chas. G. Kuhn.....1940 Howe St.
House.....	Wm. Behrens.....2208 Sedgwick St.

THIRTY-SECOND DISTRICT.—The Counties of Hancock, McDonough and Warren.

Republican—	
House.....	S—Henry Terrill—N. V.....Colchester.
	Henry L. Jewell—A.....Monmouth.
	I. M. Martin.....La Harpe.
Democratic—	
House.....	John Huston—A.....Blandinsville.
	E—George A. Falder.....Colchester.
	David Turnbull.....Monmouth.
Prohibition—	
House.....	William F. Aleshire.....Plymouth.
Socialist—	
House.....	J. Benjamin Edens.....Monmouth.

THIRTY-THIRD DISTRICT.—The Counties of Henderson, Mercer and
Rock Island.

Republican—		
Senate.....	Frank A. Landee—N. V.....	Moline.
House.....	S—Thomas Campbell—F.....	Rock Island.
	Frank E. Abbey—N. V.....	Biggsville.
	S—Charles A. Clark.....	Sherrard.
Democratic—		
House.....	Henry L. Wheelan—A.....	Rock Island
	S—James S. Sloan.....	Biggsville
	S. Alexander LaVanway.....	Rock Island
Prohibition—		
Senate.....	Robert G. Summers.....	Rock Island
House.....	Clyde E. Duke.....	Rozetta
	S—John Marion Fort.....	Stronghurst
Socialist—		
Senate.....	Louis F. Hacmer.....	Moline
House.....	Charles Block.....	Rock Island

THIRTY-FOURTH DISTRICT.—The Counties of Clark, Coles and Douglas.

Republican—		
House.....	D. B. Miller.....	Casey
	S—William T. Hollenbeck—N. V.....	Marshall
	S—Guy R. Jones.....	Tuscola
	S—Carl S. Burgett—A.....	Newman
Democratic—		
House.....	Seymour Hurst.....	Marshall
	Edward F. Poorman.....	Mattoon
	Polk B. Briscoe—N. V.....	Westfield
	S—Marion Watson.....	Arthur
Prohibition—		
House.....	S—Lewis M. Mulliken.....	Hindsboro
	E—W. H. Emery.....	Charleston
Socialist—		
House.....	Oscar Giese.....	Mattoon

THIRTY-FIFTH DISTRICT.—The Counties of Lee, DeKalb and Whiteside.

Republican—		
Senate.....	S—John H. Gray—A.....	Morrison
	Adam C. Cliffe—A.....	Sycamore
House.....	Albert T. Tourtillott.....	Dixon
	S—Alfred N. Abbott.....	Morrison
	Andrew A. Bjelland.....	Leland
	S—Arthur G. Harris.....	Dixon
Democratic—		
Senate.....	Bradford Brinton.....	Dixon
House.....	W. A. Kannally—F.....	Sterling
	Burr B. Smiley.....	DeKalb
Prohibition—		
Senate.....	Alexander C. Senska.....	Genoa
House.....	S—Jacob H. Hoofstittler.....	Sterling
	George H. Sieben.....	Prophetstown
Socialist—		
Senate.....	N. H. Jensen.....	Dixon
House.....	S—J. B. Stackpole.....	Dixon

THIRTY-SIXTH DISTRICT.—The Counties of Adams, Calhoun, Pike and Scott.

Republican—		
House.....	George H. Wilson—N. V.....	Quincy
	S—Jerome O. Christie.....	Quincy
Democratic—		
House.....	S—William H. Hoffman.....	Quincy
	S—Charles E. Bolin.....	Milton
	E—Clement L. Hawkins.....	Golden
	Jacob Groves—A.....	Camp Point
	S—Sylvester Allen.....	Bluffs
Prohibition—		
House.....	Lucien Cover.....	Quincy
Socialist—		
House.....	James I. Houseweart.....	Pittsfield

THIRTY-SEVENTH DISTRICT.—The Counties of Bureau, Henry and Stark.

Republican—		
Senate.....	H. S. Magill, Jr.....	Princeton
	B. Frank Baker.....	Kewanee
House.....	S—Augustus G. Hammond.....	Wyoming
	S—Clayton C. Pervier—F.....	Sheffield
	John G. Stewart.....	Seatonville
	John Robert Moore.....	Wethersfield

Democratic—		
Senate.....	David W. Davis.....	Wethersfield
House.....	S—Charles E. Mulligan.....	Kewanee
	S—William J. McGuire—F.....	Kewanee
	James E. Dabler.....	Princeton
Prohibition—		
Senate.....	O. L. Dayton.....	La Mollie
	J. W. Ross.....	Walnut
House.....	E. E. Shawl.....	Lafayette
Socialist—		
Senate.....	Patrick Carr.....	Ladd
House.....	Frank A. Castle.....	Kewanee

THIRTY-EIGHTH DISTRICT.—The Counties of Green, Jersey, Macoupin and Montgomery.

Republican—		
House.....	Frank Rowden.....	Jerseyville
	Hugh D. Friel.....	Benld
	S. Elmer Simpson.....	Carrollton
	David Davis.....	Litchfield
	John McQuerrey.....	Greenfield
	David H. Best.....	Nokomis
Democratic—		
House.....	S—Louis P. Daley—N. V.....	Carlville
	Stephen D. Canaday.....	Hillsboro
	George W. Witt.....	Kane
	J. A. Turner.....	Scottville
	James P. Kellet.....	Witt
	S—Adolph Neuber.....	Litchfield
	John C. Bowman.....	Carrollton
	Henry A. Shephard—F.....	Jerseyville
Prohibition—		
House.....	E—Robert H. Fullerton.....	Carrollton
Socialist—		
House.....	S—J. J. Keen.....	Grafton

THIRTY-NINTH DISTRICT.—County of La Salle.

Republican—		
Senate.....	Henry W. Johnson.....	Ottawa
	S—John Wylie.....	Utica
House.....	William R. Lewis—A.....	Grand Ridge
	S—William M. Scanlan—A.....	Peru
	S—George F. Bell.....	Lostant
	S—Harry C. Barbour.....	Ottawa
	P. L. Harris.....	Meriden
Democratic—		
Senate.....	George E. Glass.....	Streator
House.....	Lee O'Neil Browne—N. V.....	Ottawa
	John J. McCluskey.....	Peru
	S—Peter Reinhard.....	Streator
	S—J. Fritchel.....	Streator
	James G. Doyle.....	La Salle
Prohibition—		
Senate.....	Ralph L. Wylie.....	Seneca
House.....	J. S. Woodward.....	Grand Ridge
Socialist—		
Senate.....	Ira H. Carpenter.....	Streator
House.....	Duncan McDonald.....	La Salle

FORTIETH DISTRICT.—The Counties of Christian, Cumberland, Fayette and Shelby.

Republican—		
House.....	S—Walter M. Provine.....	Taylorville
	Dell D. Brownback—N. V.....	Cowden
	Theodore J. Cummings.....	Vandalia
	Charles T. Wade.....	Farina
Democratic—		
House.....	John C. Ricardson—N. V.....	Edinburg
	S—Francis M. Guinn.....	Vandalia
	S—Ernest Zimmer.....	Neoga
	S—Joseph S. Clark—F.....	Vandalia
	Warren A. Purkiser.....	Gays
	S—William H. Harp.....	Morrisonville
Prohibition—		
House.....	S—Henry Megeath.....	Toledo
	William A. Fuson.....	Pana
Socialist—		
House.....	James Haynes.....	Pana

FORTY-FIRST DISTRICT.—The Counties of Du Page and Will.

Republican—	
Senate.....	Richard J. Barr—N. V.....Joliet
	S—John P. F. Conrad.....Peotone
House.....	E—Guy L. Bush—F.....Downers Grove
	S—James H. Alexander.....Lockport
	Oliver M. Olson.....Wheaton
	William Leimbach.....Joliet
	Fred L. Hasenjaeger.....Frankfort
	S—Richard Prendergast.....Winfield
Democratic—	
Senate.....	Andrew S. Phelps.....Joliet
House.....	Thomas H. Riley—F.....Joliet
	S—M. F. Hennebry.....Wilmington
	S—Bernard L. Kelly.....Joliet
Prohibition—	
Senate.....	John S. Stamm.....Downers Grove
House.....	Frank E. Herriek.....Wheaton
Socialist—	
Senate.....	Frank X. Lasser.....Joliet
House.....	Conrad Lapp.....Joliet

FORTY-SECOND DISTRICT.—The Counties of Clay, Clinton, Effingham and Marion.

Republican—	
House.....	R—J. C. Eisenmayer.....Trenton
	S—Erastus D. Telford.....Salem
	D. D. Haynie.....Salem
	William E. Lown.....Dieterich
	Robert S. Jones.....Iola
Democratic—	
House.....	S—Harvey D. McCollum—A.....Louisville
	John B. Barnhill.....Xenia
	Frank A. Rogers.....Salem
	Thomas E. Merritt.....Salem
	T. W. Culbertson.....Louisville
	S—Fred J. Koch.....New Baden
	S—Walter E. Rinehart.....Effingham
Prohibition—	
House.....	S—James F. Rosborough.....Centralia
Socialist—	
House.....	S—Frank Weleher.....Beckemeyer

FORTY-THIRD DISTRICT.—The Counties of Fulton and Knox.

Republican—	
Senate.....	Charles F. Hurburgh—F.....Galesburg
House.....	Burnett M. Chipfield—N. V.....Canton
	Edward J. King—A.....Galesburg
	S—W. Scott Edwards.....Lewistown
Democratic—	
Senate.....	L. F. Brown.....Galesburg
House.....	S—J. H. DeWolf—A.....Canton
	L. R. Vandeventer.....Glasford
	Stephen A. Hoxworth.....Rapatee
	R—W. H. Pankey.....Galesburg, R. F. D. 2
	M. P. Rice.....Lewiston
Prohibition—	
Senate.....	Charles W. Williams.....Galesburg
House.....	William M. Horton.....Astoria
Socialist—	
Senate.....	D. M. Baylor.....Galesburg
House.....	James Lord.....Farmington

FORTY-FOURTH DISTRICT.—The Counties of Jackson, Monroe, Perry, Randolph and Washington.

Republican—	
House.....	Dempsey Winthrop.....Pinckneyville
	William Stevenson.....Tilden
	S—Theodore E. R. Klix.....Radom
	S—S. W. McGuire.....Sparta
Democratic—	
House.....	James M. Etherton—A.....Carbondale
	John L. Cox.....Murphysboro
	T. M. Gillespie.....Lively Grove
Prohibition—	
House.....	William Quigley.....Vergennes
Socialist—	
House.....	Edward Brown.....Murphysboro

FORTY-FIFTH DISTRICT.—The Counties of Morgan and Sangamon.

Republican—		
Senate.....S—	Logan Hay—N. V.....	Springfield
	Lawrence L. Flinn.....	Springfield
House.....S—	Harry W. Wilson—N. V.....	Springfield
	Thomas E. Lyon—N. V.....	Springfield
	Clarence L. McBride.....	Springfield
	S—Frederick Worth Peden Ishmael.....	Springfield
	S—Richard E. Fox.....	Chapin
	William Booth.....	Springfield
	Edward Houston.....	Springfield
Democratic—		
Senate.....	John Peter Mockler.....	Springfield
	S—Edward L. Merritt.....	Springfield
	William S. Lurton.....	Jacksonville
	Elmer A. Perry.....	Springfield
House.....	Thomas L. Jarrett.....	Springfield
	S—James F. Morris—A.....	Springfield
	Charles McBride.....	Springfield
	Daniel Babau.....	Jacksonville
	S—James M. Bell.....	Rochester
	S—Robert E. Lee Montgomery.....	Jacksonville
Prohibition—		
Senate.....	Henry M. Hart.....	Auburn
House.....S—	William C. McCullough.....	Jacksonville
Socialist—		
Senate.....	Frank S. O'Neill.....	Springfield
House.....	Ralph W. Signaigo.....	Springfield

FORTY-SIXTH DISTRICT.—The Counties of Jasper, Jefferson, Richland and Wayne.

Republican—		
House.....S—	George B. Welborn—A.....	Woodlawn
	S—B. E. Garrison.....	Wayne City
Democratic—		
House.....	John M. Rapp.....	Fairfield
	R—H. Martin Williams.....	Woodlawn
	John A. MacNeil.....	Olney
	S—William F. Simmons.....	Texico
	E—W. Duff Piercy.....	Mt. Vernon
Prohibition—		
House.....	Caswell S. Prather.....	Newton

FORTY-SEVENTH DISTRICT.—The Counties of Bond and Madison.

Republican—		
Senate.....S—	Edmond Beall.....	Alton
	S—Frederick E. Tulley.....	Graute City
House.....R—	Norman G. Flagg—N. V.....	Moro
	J. G. Bardill—N. V.....	Highland
	Louis Ahrens.....	Wanda
Democratic—		
Senate.....	Charles W. Terry.....	Edwardsville
House.....S—	William B. Thomas.....	Edwardsville
	S—M. L. Geers.....	Edwardsville
	S—Jos. F. Long.....	New Douglas
	James T. Callahan.....	Alton
	Wm. Dickman.....	Edwardsville
Prohibition—		
Senate.....	Rumsey O. Young.....	Sorento
House.....	Elijah N. Groce.....	Upper Alton
Socialist—		
Senate.....	Hugh Watson.....	Troy
House.....	Frank J. Hayes.....	Collinsville

FORTY-EIGHTH DISTRICT.—The Counties of Crawford, Edwards, Hardin, Lawrence, Wabash and White.

Republican—		
House.....S—	James A. Watson.....	Elizabethtown
	D. E. Rose.....	Maunie
	John A. Logan—N. V.....	Junction
	Charles O. Harper.....	Robinson
Democratic—		
House.....	Charles L. Scott—F.....	Grayville
	John P. Schumacher.....	Emma
	William E. Finley—F.....	Bridgeport
	Emanuel Pyle.....	Brownsville
Prohibition—		
House.....S—	J. W. Kilborn.....	Mt. Carmel
	Wilbur A. Morgan.....	Bone Gap

FORTY-NINTH DISTRICT.—The County of St. Clair.

Republican—	
Senate.....	John E. Thomas.....Belleville
	E. C. Singers.....E. St. Louis
	John M. Chamberlin, Jr.....E. St. Louis
House.....	Eugene Wright.....E. St. Louis
	E—H. Lee Gardner.....E. St. Louis
	John L. Flannigen—N. V.....E. St. Louis
	S—Alonzo A. Miller.....Belleville
	Martin Schnipper.....Belleville
	S—Charles A. Sherrer.....E. St. Louis
Democratic—	
Senate.....	J. T. W. Rudesill.....E. St. Louis
	Fred J. Kern.....Belleville
House.....	James H. Donahue.....E. St. Louis
	Dennis J. Foley.....E. St. Louis
	S—Charles A. Karch.....Belleville
	Frank G. Punch.....E. St. Louis
Prohibition—	
House.....	Edwin W. Walker.....Marissa
Socialist—	
Senate.....	John Wachter.....Belleville
House.....	Adolph F. Germer.....Belleville

FIFTIETH DISTRICT.—The Counties of Alexander, Franklin, Pulaski, Union and Williamson.

Republican—	
House.....	Hall Whiteaker.....Mound City
	Frank E. Davis.....Carlo
	R. D. Kirkpatrick—A.....Benton
	Walter D. Parmly.....Cobden
	James W. Crawford—F.....Benton
Democratic—	
House.....	Henry G. Carter.....Mound City
	L. E. Robertsou.....Carterville
	Holly R. Buckingham.....Alto Pass
	S—Robert P. Hill.....Marion
	Fred M. Pool.....Herrin
Prohibition—	
House.....	.....
Socialist—	
House.....	Groce Lawrence.....Herrin

FIFTY-FIRST DISTRICT.—The Counties of Hamilton, Johnson, Massac, Pope and Saline.

Republican—	
Senate.....	Douglas W. Helm.....Metropolis
House.....	Elwood Barker.....McLeansboro
	G. W. Hill.....McLeansboro
	Charles Durfee.....Goleonda
	John P. Mathis.....Vienna
	Joseph Crawford.....Belknap
	Pinckney J. Walker.....Galatia
Democratic—	
Senate.....	Warner D. Crouch.....Belle Prairie
House.....	Geo. W. English.....Vienna
Prohibition—	
Senate.....	E. C. Stark.....Delwood
House.....	C. W. Henderhon.....Galatia
Socialist—	
Senate.....	C. B. Titus.....Harrisburg
House.....	C. A. Sullivan.....Harrisburg

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Chairman Public Relations Committee, Chicago Medical Society.

Special Articles.

FIRST YEAR'S EXPERIENCE OF A COUNTRY DOCTOR.

JOHN H. HOLLISTER, M.D.

CHICAGO.

I think few physicians fail to remember the varied experiences connected with their first year of medical practice. I surely well remember mine.

Not having had the advantages of clinical instruction, for such was not afforded by our medical colleges sixty years ago, I was often thrown upon my own resources in the translation of what I had read in the books and heard in the lecture-room, into actual practice, especially as I often had to prescribe for patients at a distance from home and with no possibility for consultation. During the summer and autumn of 1848 the diseases which I met at Otisco, Mich., were nearly all of the malarial type. Four miles distant, several saw-mills had been recently erected and new lands had been overflowed, and the drawing down of these ponds every day caused malarial exhalations which bred disease in every direction, and beside this, the entire farming region was being rapidly converted into cultivated fields, and the upturning of the virgin soil was an equal menace to the general health. Nearly every home had its invalids and the calls for medical treatment were as numerous as the most ambitious doctor could desire. It was years later that Laveran, of Italy, told us that the plasmodium malarie was the cause of all this trouble and that quinin would surely kill it. I then only knew that quinin would cure ague, though entirely ignorant of the why, but for practical purposes that was sufficient. For two hundred years it had been known as Jesuit bark, named for its discoverers, then as Peruvian bark, indicating the source of its supply, and a teacupful of the moistened powder was considered as a proper dose. As early as 1830 quinin began to be substituted for bark by those who were able to buy it. As a child I overheard the watchers say they had given twenty grains of quinin the night before to a patient who had died that morning, and that name never escaped me.

Nearly all of the diseases which I was first called to treat yielded so promptly that my reputation as a young practitioner, fresh from the schools, grew in favor as rapidly as I could desire, and I myself began to harbor the impression that I was quite a remarkable physician, and could cure nearly every one that came within my reach. But when the winter came and one after another of my patients, in their anemic condition, dropped away with acute pneumonia, and a severe epidemic of "brain fever," as it was then called, invaded our settlement and took from us a number of our most prominent citizens, both old and young, I was not long in coming down from my high perch and began to doubt whether I could cure anybody.

During the summer I had been associated with an old friend who had now gone to Cleveland to attend a second course of lectures and obtain a diploma, and I had the whole field to myself, save as I could summon counsel from Ionia, seventeen miles distant. Still keeping my counsels well to myself I was able to hold my footing, and much to my surprise the people had more confidence in me than I had in myself. I surely served them the best I knew and was grateful for their fidelity. I have since been engaged in practice over sixty years and during that period have treated many thousands of patients, but never since have I been so elated as during that first summer, nor so distrustful of myself as during that first winter. In looking back over this long period, I flatter myself that the vast majority of my patients were hastened back to health through my agency. Just how many recovered in spite of it I have never been able to determine. But I pass on to say that the young physician in the city, who can at once summon the help of an able consultant and with him divide the responsibility in the treatment of critical cases knows nothing of the trying ordeal which confronts the country doctor, and yet, what remarkable records many of these have made. Everyone cherishes a tender regard for the heroism of Dr. Ephraim Macdowell, who in that little hamlet of Danville, Ky., single handed and alone, performed the first ovariectomy of which there is any record in the annals of surgery. It was Sims who fought his way from the rounds of a country practice to one of the foremost positions in the world as a gynecologist. It was Jenner, a country practitioner, who gave us vaccine. It was Williams, who from being a country doctor, became the foremost pathologist of his time in England, and thus the list could be almost indefinitely extended of those who rose to eminence from country homes. Not a word of disparagement for those who have every advantage of clinical instruction and have at command able consultants, but the real fibre of the man is wrought out in the country doctor. During my first year I had quite an extended obstetrical practice, which sometimes put me extremely upon my metal, and my later experience has given me the conviction that I was wise in not being over officious for the sake of gaining time.

A country physician twenty miles from home, in the selection of remedies, is limited to the contents of his saddle-bags, and a doctor called that distance is expected to *do* something if he charges for his visit. I was thus called and must meet the expectation of the whole neighborhood. The case was that of a little boy, bitten by a venomous snake. In all that region whiskey was the popular remedy for snake-bites, and of course I prescribed whiskey, and the old fellows of the neighborhood, who were familiar with that article, heartily endorsed my prescription and allowed that that young doctor was up to date on snakes. But it occurred to me that something more must be done, since I had come twenty miles and the neighbors could have made that prescription without my help. So I ransacked my brain to select something from my saddle-bags a little above their comprehension. It was purely a matter of accident, but I hit upon a bottle of aqua ammonia and sweet oil. Its repeated application would give them something to do,

which I deemed important and then the fumes of the ammonia would convince them that it was "mighty powerful." That snake-bite gave me the business of that neighborhood. But the real point is this: The *London Lancet*, some thirty years later, quoted at length an article from an East India journal, advocating both the external and internal use of ammonia as one of the most serviceable remedies in the treatment of snake-bites. I prescribed better than I knew.

Sixty years have passed since that time. I have passed through many and varied experiences in a city numbering, when I came, 40,000, and now over 2,000,000 of inhabitants, and have been conversant with city practice, hospitals, and medical teaching but in all this time, amid all these pleasant memories, I have never forgotten my crude and sometimes amusing experiences, during my first year as a country doctor.

BACTEREMIA WITH SPECIAL REFERENCE TO ENDOCARDITIS.*

E. C. ROSENOW, M.D.
CHICAGO.

The bacteriologic study of the blood in recent years has thrown much light upon the nature of the infectious diseases, has made the treatment more rational, and has earned a valuable place as a routine diagnostic test. The technic is simple and the discomfort to the patient trivial. It is not the purpose of this paper to review the voluminous literature nor to discuss questions of purely scientific interest, but rather to point out some of the more important practical bearings of this highly important topic.

The value of early blood cultures in typhoid fever is greater than any of the other diagnostic tests. Positive cultures are obtained by various investigators in from 75 to 90 per cent. of the cases. Similar results are obtained in paratyphoid infections. The finding of the bacterium in the blood in these cases is the best means of arriving at a positive diagnosis. The presence of pneumococci in the blood in lobar pneumonia is well recognized. Early in the attack (up to 4 or 5 days) the cultures are positive quite as often in the fatal and non-fatal cases. While late in the disease, other things being equal, the finding of the pneumococci in the blood indicates a bad, although not necessarily a fatal, prognosis. The presence of pneumococci in the blood in broncho-pneumonia, ether pneumonia and pneumonia of infancy and childhood, is so uncommon that blood cultures are only occasionally of diagnostic value. The demonstration of influenza bacilli in the blood in influenza, and the meningococcus in epidemic cerebrospinal meningitis, is so difficult that this procedure can not be recommended for routine work. Blood cultures in the acute endocarditis of rheumatism and in the cases of simple endocarditis of chorea and those following tonsillitis are uniformly negative, notwithstanding the fact

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that at least a transient bacteremia must necessarily have been present. Early in tonsillitis, acute osteomyelitis, otitis, puerperal sepsis, and other acute pyogenic infections, it is not uncommon to find streptococci, pneumococci, and less often staphylococci in the blood. Subsequent cultures are usually negative and if so are a favorable sign. If, however, the infection has caused thrombosis of the larger vessels, the cultures are usually positive and indicate a grave prognosis. The early proximal ligation of the thrombosed vessel when possible, as has been suggested by some, would seem to be a rational procedure, and in a number of reported cases, seemed to cause the disappearance of the organisms from the blood and recovery of the patient. How can we differentiate between bacteremia with (endocarditis) and bacteremia without (septicemia) localization on the endocardium? This is of especial importance because of the recent reports of the prompt alleged cures of cases of endocarditis by means of vaccine therapy.

As just pointed out, even the continued presence of bacteria in the blood does not prove that the heart valves are involved. The development of an accidental cardiac murmur, which cannot clearly be differentiated from those due to organic valvular disease during the course of a severe infection, is not very uncommon. The appearance of the murmur in endocarditis may be much delayed. Petechial hemorrhages even may occur without localization on the heart valve. Hence the greatest care must be exercised before conclusions can be drawn in these conditions. The clinical picture in acute endocarditis is so typical that there is usually little difficulty in arriving at a correct diagnosis. The micro-organisms isolated in these cases present no special features. The differentiation, on the contrary, of the cases of endocarditis which run a more chronic course and which practically always attack previously injured valves from other septic infections, on clinical grounds, is often impossible until very late in the disease. The isolation and study of the infecting micro-organisms in these cases should always be done, because it affords the best evidence upon which an early diagnosis can be made. The micro-organisms show features which are in a large measure characteristic of endocarditis and more particularly of the malignant tendency of the infection. From my studies on endocarditis it appears that the clinical course, the character of the lesion on the valves, whether vegetative or ulcerative, and the other pathologic findings in endocarditis, depend more than has been thought in the past, on the degree of virulence of the infecting micro-organism than on the kind of bacteria in question. Thus in acute pneumococcus endocarditis which follows pneumonia or osteomyelitis, the organisms are highly virulent and present no characteristic features.

In chronic pneumococcus endocarditis,¹ on the other hand, the cocci show varying degrees of modification, depending upon the length of the clinical course. The characteristics which strongly suggest endocarditis are briefly these: the organisms produce a smaller amount of green in

1. The reasons for believing that the organisms which are isolated in the vast majority of these cases by all observers are modified pneumococci, are shown in the *Jour. of Infectious Diseases*, Chicago, Vols. vi, 1909, and vii, 1910.

blood agar plates than ordinary pneumococci, the colonies adhere more or less tightly to the surface of agar slants, grow in clumps in broth, and the fibrin clot which forms in broth to which the blood is added, leaves a clear fluid. They are Gram positive diplococci, often in long chains, are freely susceptible to phagocytosis, and are of very low grade of virulence to animals. Analogous observations were made in a case of staphylococcus endocarditis.

While blood cultures are of great value in the identification of these conditions, it should be remembered that the same holds true here as applied to laboratory methods generally, viz., the results should always be interpreted and studied in the light of the general clinical picture, and should serve not to minimize the value of thorough clinical study of the patient, but to make the latter more rational and conclusive. Brief abstracts of a number of more unusual cases will serve to illustrate the great value of cultures as a routine measure in diagnosis of more obscure infections.

CASE 1. Streptococcemia with septic temperature following an attack of tonsillitis in a middle aged man with an old mitral insufficiency, due to endocarditis following rheumatism; mitral systolic murmur, which changed noticeably in quality. Spleen palpable, slightly tender; leucocytosis, 18,000; several subcutaneous hemorrhages; pure culture streptococcus pyogenes isolated from blood. Diagnosis of acute streptococcus endocarditis was made and a fatal prognosis predicted. The patient made an uneventful recovery. This would have been a brilliant example of a cure of endocarditis from vaccine therapy, had the injections been given. It was undoubtedly a case of streptococcemia without localization on the heart valves.

CASE 2. Puerperal sepsis in a middle aged woman who during her prolonged illness developed a mitral murmur with moderate dilatation of the heart. Pure culture of streptococcus pyogenes early in the course of the disease. Two weeks later the culture was negative and recovery slowly occurred without special treatment.

CASE 3. An attack in a young woman closely resembling acute appendicitis. Appendectomy performed thirty-six hours after beginning of symptoms. There was found a moderately swollen appendix with several small ulcers of the mucous membrane, together with a chain of acutely enlarged mesenteric lymph glands which drained the appendix. The picture suggested typhoid fever, a blood culture yielded a pure culture of paratyphoid bacillus. The patient made an unusually prompt recovery. The infection clearly began in the appendix and it appeared that its early removal shortened the attack.

CASE 4. Puerperal sepsis associated with extensive thrombosis of the left jugular and brachial veins. Blood culture yielded a pneumococcus of low virulence. The development of a soft blowing murmur over base of the heart suggested an endocarditis, but the patient made an uninterrupted recovery.

CASE 5. Influenza in an elderly lady with an abrupt onset, leucocytosis 10,500, marked prostration, intense backache, temperature 102.5°. Ten c.c. of blood were planted into the usual media, including ascites broth. In the latter there developed a pure culture of influenza bacilli. Recovery took place in the usual manner.

CASE 6. Acute follicular tonsillitis, pure culture of streptococcus pyogenes obtained from the blood during the initial chill. The culture, on the following day was sterile. The patient recovered in the usual manner.

WHAT KILLS THE BABIES

THIS DIAGRAM SHOWS THE CHIEF CAUSES OF DEATH AMONG CHILDREN UNDER TWO YEARS OF AGE AND THE RATIO OF EACH CAUSE TO THE TOTAL DEATHS IN THIS AGE DIVISION.

In each 100 deaths among children under 2 years of age 37 are caused by diseases of the digestive system; 23 by the impure-air diseases, 19 by defects and accidents at birth; 9 by acute contagious diseases; 3 by diseases of the nervous system; 2 by tuberculosis, 2 by violence, 1 by venereal diseases; etc.

70 PERCENT OF SUCH DEATHS CAN BE AVOIDED - WITH PROPER CARE

	PERCENT OF TOTAL DEATHS UNDER 2 YRS.								Chief causes of death among children under 2 years of age and the proportion each contributes to the total at this age period.
	5	10	15	20	25	30	35	40	
DIARRHEAL DISEASES AND OTHER DISEASES OF DIGESTIVE SYSTEM	36.9								Diarrheal Diseases 36% Convulsions 3.6% Gastritis 1.4% Other Dis. of Digestive Sys. 1.4%
IMPURE-AIR DISEASES	22.6								Pneumonia 16.4% Bronchitis 5.8% Influenza .4%
CONGENITAL DEFECTS AND ACCIDENTS	19.2								Premature Birth 7.2% Congenital Debility 4.7% Injuries at Birth 1.4% Other Defects at Birth 5.9%
ACUTE CONTAGIOUS DISEASES	8.7								Diphtheria 2.7% Scarlet Fever 2.1% Whooping Cough 1.9% Measles 1.7%
DISEASES OF NERVOUS SYSTEM	3.2								Meningitis (simple) 2.4% Other Dis. Nervous Sys. .7%
TUBERCULOSIS	2.2								Tuberculosis - Lungs .7% Meninges 1.0% Abdominal .2% All Other .3%
VIOLENCE	1.7								Accidents - 1.2% Suffocation .2% Burns and Scalds .5% Falls .1% Homicide .5%
VENEREAL DISEASES	1.0								Syphilis 1.0% Gonorrhea .1%
DISEASES OF URINARY SYSTEM	.6								Nephritis .5% Other Dis. Urinary Sys. .1%
RICKETS	.6								Rickets .6%
DISEASES OF HEART AND BLOOD VESSELS	.5								Heart Diseases .3% Other Circulatory Dis. .2%
ERYSIPELAS	.4								Erysipelas .4%
ALL OTHER DISEASES	2.4								Tetanus and Trismus .3% Pyemia and Septicemia .2% All other causes 1.9%

COUNTY AND DISTRICT SOCIETIES.

COOK COUNTY.

CHICAGO LARYNGOLOGICAL AND OTOLOGICAL SOCIETY.

Regular Meeting held May 17, 1910.

President, DR. GEORGE E. SHAMBAUGH, in the Chair.

SARCOMA OF THE NASAL WALL OF THE MAXILLARY ANTRUM.

O. T. FREER, M.D.

In August, 1908, the patient, then a woman aged 40 years, noticed an increasing obstruction in the left nostril. The occlusion soon became complete and was associated with repeated severe nose bleed, and when I first saw her in December, 1908, the condition was associated with an intensely fetid breath. Inspection of the naris showed it apparently filled with mucous polypi, but when the anterior ones of these were removed a deep pink lobulated growth appeared farther back in the nostril, which bled when touched. By posterior rhinoscopy the nasopharynx was seen to be quite filled by a gray sloughing tumor, which proved to be the source of the stench. The intranasal growth and its postnasal extension were removed with the pernasal forceps I employ for taking away adenoid vegetations through the nose and which I have described in the *Annals of Otology* for 1906.

While the removal of the growth produced severe hemorrhage, it could be taken away so rapidly with this forceps, including the postnasal mass, that the total loss of blood was not great, for as soon as the healthy base of the tumor was reached the bleeding ceased. It would have been impossible to work as quickly or thoroughly with postnasal forceps as with the pernasal ones, or as intelligently, for the use of the index finger as a guide in the nasopharynx accurately led the pernasal forceps to the portions of the neoplasm which it grasped. In addition the pernasal forceps was employed to clear out the interior of the naris as well as the nasopharynx, so that this one instrument served for the whole procedure.

It was found that all of the turbinated bodies and the ethmoid cells upon the affected side had disappeared by absorption and softening into the growth, so that the completion of the operation left the left naris a large cavity.

Within a few weeks the tumor returned in the nasal wall of the antrum and this too had to be removed in a second operation, so that the maxillary antrum became one cavity with the nasal fossa. There were other minor relapses, so that six operations in all were needed, the last recurrence appearing in the outer wall of the antrum and being cleaned off with the Gruenwald nasal curettes, the Gruenwald punch, and the Rhodes tonsil punch.

Since this last removal, in September, 1909, there has been no return of the neoplasm and the woman has remained in perfect health.

In all of the operations large portions of the growth were found necrotic, a condition evidently due to a tendency of the tumor to shut off its own circulation by degeneration of its vessels. Repeated microtome sections were made which also showed extensive necrosed areas, so that it was difficult to find enough living tissue for a histologic diagnosis. This was finally made for me, through the kindness of Dr. George Shambaugh, in the laboratories of the University of Chicago, the conclusion reached being that the tumor was a mixed sarcoma, mainly of the round celled type, with some spindle cells.

The tendency to rapid degeneration of some sarcomas is well known and is shown by the influence of erysipelas in causing degeneration and absorption of these growths.

The history of this case shows that the rapid removal of a nasal sarcoma with the perinasal forceps makes the bleeding negligible, as it will be sure to be arrested when the base of the growth is reached.

There is no doubt that the general surgeon would have attempted to remove this tumor by approaching it from without by a resection of the upper jaw and the favorable result in this case is another proof that rhinology can accomplish intranasally at least as much as can be done by such formidable procedures.

It is only in exceptional instances, where a round-celled sarcoma is not of the most malignant type, that such a favorable result, as that obtained in this case, may be expected. A number of other intranasal sarcomas I have seen, and which originated in the same locality in the nose, were so exceedingly malignant and recurred so rapidly that they were perfectly uncontrollable. As is well known, the variation in the malignancy of sarcomas is far greater than in carcinoma.

DISCUSSION.

Dr. E. Fletcher Ingals:—I have seen a number of cases of this kind, but none of the patients recovered; however, a case of recurrent fibrosarcoma that did recover, is of interest. The patient was about fourteen years old when I first saw him. The late Dr. Gunn attempted to remove a part of the growth, which had extended into the zygomatic region, but there was so much hemorrhage that he closed the incision without doing anything further. I removed the growth from the naso-pharynx and naris two or three times during as many years. Then he disappeared for a number of years. When he was twenty-seven years old he called to see me and I found that the tumor had entirely disappeared, leaving a large cavity about the size of a hen's egg in the back part of his nose.

Dr. C. M. Robertson recalls a case of angioma sarcoma in a man 45 years old where the left naris was occluded by a mass which protruded. It bled very freely. The antrum was filled with the growth and it had perforated into the orbit causing exophthalmos. On account of the severe pain and the hemorrhage which occurred several times a day, and on account of the severe stench, he removed as much as possible with the punch forceps. The exophthalmos disappeared with the disappearance of the tumor. The patient was well three years later and has not been seen since. In another patient 27 years old, with a fibrosarcoma, Dr. Senn had removed the entire septum and external wall of each nostril. When seen the patient had a growth in the nose which felt and cut much like soft rubber. The hemorrhage was profuse. He made several efforts to encircle the tumor—which appeared to hang from the cribiform plate—with a snare, but without success. The patient disappeared from observation. There is a difference in malignancy between the various sarcomas which involve the nose. Some disappear spontaneously. It is sometimes impossible to make a distinction between a myxoma, a fibroma, and a myxosarcoma. He believes that Dr. Freer's case is one of myxosarcoma. In angioma the hemorrhage is most alarming at first but as one nears the base of the tumor the hemorrhage stops.

Dr. J. Holinger emphasized the value of the symptom of stench in these cases, which is not especially emphasized in text-books.

Dr. F. L. Brown saw in a man aged 40 years a sarcoma springing from the inferior turbinated body, right side. The tumor was a typical spindle-celled sarcoma. After its removal there was a rapid recurrence. After the second operation the patient was given six x-ray treatments. There has been no recurrence. The characteristic stench was present in this case.

Dr. J. C. Beck has seen several cases of sarcoma involving the nose. One was a case of fibro-sarcoma with necrotic area. The patient was operated upon by resection of the superior maxillary bone. The tumor recurred but subsequently under large doses of potassium iodid the patient made a complete recovery. Syphilis in some cases is difficult to diagnose from sarcoma. Nasal sarcomas are often slow growing. This has been emphasized recently by Dr. Welsh. The stench which is complained of in almost all of the cases is undoubtedly the

result of necrosis. He has seen two cases of fibro-sarcoma in which a temporary resection was done with no recurrence.

Dr. Freer (closing the discussion) emphasized the attitude of the general surgeon to these intra-nasal sarcomas. There is little doubt but that every one of the cases mentioned here this evening would have been subjected by the general surgeon to a resection of the upper jaw or some other mutilating operation. The general surgeon takes the attitude that nothing in the nose can be attacked successfully without removing half of the face. Dr. Freer has seen cases operated on by the general surgeon where the entire hard palate was lowered in order to get access to the nasopharynx. The patient died on the table. Any expert rhinologist would have removed the growth intra-nasally. Of course an extremely malignant tumor operated on intra-nasally without success would give rise to the doubt whether the radical external operation might not have been more successful. As a matter of fact these malignant sarcomas will recur no matter what is done. The other sarcoma can be removed intra-nasally with recovery.

SURGERY OF THE MIDDLE TURBINATE.

A. H. ANDREWS, M.D.

Dr. Andrews divides the abnormalities of the middle turbinate that may call for surgical interference into two classes. First, conditions of the middle turbinate itself; second, of the surrounding structures. He believes that the turbinate may lie too close to the outer wall and interfere with the drainage from frontal sinuses, anterior ethmoid cells and maxillary sinuses. He believes that where it does not seem to interfere with drainage it may still be a source of irritation and reflex disturbance by pressing upon the septum by extending to the inferior turbinate. Of the abnormalities of the neighboring structures which may necessitate the removal of this structure he includes the following: Deflexion of the septum and enlarged bulla of the ethmoid. Among the commoner diseased conditions which are generally recognized as calling for removal of the turbinate are:

1. Polypi springing from or recurring in the immediate neighborhood of the turbinate.

2. Chronic disease of any of the anterior group of accessory cavities especially when the turbinate itself is diseased or when it lies so close to the lateral wall as to interfere with drainage, ventilation or with examination of these cavities.

3. Disease of the sphenoid sinus or posterior ethmoid cells when it may be necessary to remove the middle turbinate in order to facilitate the treatment of these cavities.

Among the conditions regarding the treatment of which there is considerable difference of opinion may be mentioned:

1. Pressure between the middle turbinate and some of the surrounding structures especially when associated with headache or pain in the eyes not otherwise accounted for.

2. A persistently red and inflamed or hypertrophied turbinate especially when the other parts of the nasal cavity appear normal. This condition is frequently associated with the same class of head and eye symptoms.

3. A large and inflamed turbinate, probably of the bullous variety, without reflex symptoms.

4. The persistent appearance of a purulent or mucopurulent discharge under the turbinate the source of which cannot be located.

5. When the turbinate is pressed upon by a small circumscribed deflection of the septum with plenty of room below for the passage of air.

6. A sensation of nasal obstruction when there is plenty of breathing space below but the middle turbinate occludes the upper air passage.

7. Atrophic rhinitis affecting the lower part of the nose with an enlarged and inflamed middle turbinate.

In the older text books little space is given to the surgery of this body. In the later text books and in recent journal articles the subject has been quite fully discussed. Of the instruments devised for the removal of the turbinate the Grunenwald forcep is perhaps the best known. Holmes' scissors have been extensively used but are thick and clumsy especially for use in a narrow nose. A number of operations on the middle turbinate other than turbinotomy and turbinectomy have been proposed. Cauterization has had its advocates but it seems to have been almost abandoned. Crushing of the turbinate in the cystic variety has been tried, and while it may have relieved pressure in some cases it has been followed by inflammatory conditions which later necessitated removal. At the present time the surgical aspect of these cases seems to have been narrowed down to the question of turbinectomy, turbinotomy or letting the turbinate alone.

Dr. Andrews demonstrated a chisel with a cutting edge between two guarded points, curved so as to follow the attachment of the turbinate while cutting, which he believes makes the turbinectomy much easier.

DISCUSSION.

Dr. F. G. Stubbs:—The middle turbinate is one of the most important structures in the nose. It is probable that it would come in for a greater share of operative interference if there was a more general recognition of the fact that the current of inspired air may be obstructed more by enlargement of this structure than from enlargement of the inferior turbinated body. Whether the removal of the middle turbinate increases the liability of infection in the accessory sinuses is still an unsettled question. He doubts whether it acts as a protection to these sinuses. Dr. Stubbs has found the chisel devised by Andrews much more suitable for the removal of the middle turbinate than the older methods. In using the snare he differs with Dr. Andrews in that he believes the best results are attainable not by placing the loop of the snare above the anterior end but by placing it on the inferior surface.

Dr. George E. Shambaugh has not used the chisel devised by Dr. Andrews but believes that it will make the removal of the middle turbinate easier than by our older methods although, as a rule, not much difficulty is encountered by the methods which we now use. He believes we can do less harm to a patient by removing the middle turbinate than by removing the inferior. In inflammation of the anterior group of accessory sinuses where the process persists, it is a great assistance to have the middle turbinate removed. He believes that in giving a list of indications for the removing of a structure like the middle turbinate such as Dr. Andrews has given in his paper, it is often advisable to point out the contraindications. He believes that while it is advisable to remove the middle turbinate occasionally for each one of the indications suggested by Dr. Andrews, it is nevertheless true that in many cases presenting just these conditions the middle turbinate should not be removed. For example, the middle turbinate exists under a variety of different forms and a beginner in reading over a list of indications for its removal such as given in Dr. Andrews' paper might, it seems, readily make the mistake of persuading himself that almost any turbinate presenting an ordinary anatomical variation should be subjected to an operation.

We are all aware that the country is being crowded just now with men whose preparation for practice in these special fields is not such as to make them capable judges of whether operations in the nose should or should not be done. Ofttimes about the only knowledge which some of these men seem to think it is necessary to acquire before undertaking special work is to become familiar with the different instruments that are used for operations in the nose without any appreciation of the pathology of the various nasal diseases.

Dr. C. M. Robertson:—The middle turbinate may be red and swollen in cases of polypi in the middle meatus without the turbinate itself being hypertrophied. He has been trying the effect of lavage of the maxillary sinuses in cases of persistent swelling of the middle turbinate and has found the result very satisfactory, indicating that a diseased condition of the maxillary sinuses causes the swelling of the turbinate. Where the bulla ethmoidalis is enlarged this should be broken down before operation upon the turbinate. Where the middle turbinate touches the inferior the removal of a strip along the lower border is sufficient. One should always aim to save as much of the turbinate as possible. This instrument presented by Dr. Andrews will not be serviceable in all cases. Dr. Robinson has seen cases where the size of the bullous enlargement would make it impossible to use the chisel. He has seen cases where the cystic degeneration of this body has progressed until enclosed sacs were formed between the lateral wall and this body. Dr. Shuder of St. Louis has designed a knife which can be slipped under the turbinate and cuts the turbinate off by pulling it forward.

Dr. R. H. Good cautioned against pressing downward when cutting off the middle turbinate body with Andrews' chisel except where it is desired to remove the entire body.

Dr. J. R. Fletcher was pleased to hear the word of caution by Dr. Shambaugh regarding the removal of the turbinates. The physiologic importance of these structures can be surmised when we remember that in twenty-four hours they furnish $\frac{1}{2}$ liter of water to moisten the inspired air. The indications given by Dr. Andrews are doubtless correct but we must be certain that the symptoms exist which warrant the removal of this body when these conditions are present.

He recalled a case where the inferior turbinate was much too large, causing an obstruction to the inspired air. This condition has adjusted itself, which shows that it was in a large measure a vaso-motor disturbance. He thinks it is immaterial whether we operate with a snare loop placed above or below, as it can be successfully removed either way. The important thing to remember is that we may cause permanent injury by removing too much of these structures. Rhinitis sicca often develops a year or two after removal of the middle turbinate.

Dr. Andrews (closing the discussion) stated that he had no doubt that the middle turbinate has the function of preventing infection of the accessory sinuses, and that in cases where the removal of the middle turbinate was followed later by disease of the antrum that the antrum trouble was the result of lack of protection. He has found polypi extending from diseased cavities in the turbinate body. It is impossible to determine what polypi found in the middle meatus comes from the turbinate itself and what from the lateral wall of the meatus. He believes that a considerable proportion comes from the turbinate body. He has never seen a middle turbinate on a cadaver or on the living that he was unable to remove with his chisel.

ARE DISEASES OF THE MIDDLE EAR ALWAYS DEPENDENT ON NASO-PHARYNGEAL DISTURBANCE?

HENRY GRADLE, M.D.

DISCUSSION.

George E. Shambaugh:—The point of view advanced by Dr. Gradle has much in its favor. Inflammatory conditions of the middle ear resemble closely similar involvements of the nasal accessory sinuses. Infection of these sinuses almost without exception have their origin in intra-nasal diseases and the same also is true for disease of the middle ear. Granting that inflammatory diseases of the middle ear have their origin in conditions in the naso-pharynx, another question of great importance presents itself: this is the question of how far we may expect to be able to improve diseases of the middle ear by looking after abnormal conditions in the nose and throat. As Dr. Gradle has well expressed it, intra-

nasal surgery has received one of its greatest stimuli from the otologist. The otologist, recognizing the fact that middle ear diseases have originated in the naso-pharynx has been in the habit of referring his cases to the rhinologist with the request to correct any abnormal conditions found in these parts. The rhinologist has often been led to proceed with the removal of any anatomical variation that may be found in the nose in the hope that this may influence the middle ear condition. This has unquestionably led to a very large amount of unnecessary work in the nose and throat, with the mistaken impression that chronic middle ear conditions could in this way be improved. A more correct view of the situation in chronic adhesive middle ear catarrh can be gained perhaps by comparing this situation with that arising from chronic suppurative otitis media. In the latter case we are quite willing to admit that the suppuration was originally the result of an extension from disease of the naso-pharynx. No one would expect to improve the defect in the hearing in a case of chronic suppuration by operations upon the nose or throat.

Cases of chronic tubo-tympanic catarrh often have their origin in the same kind of an acute process that starts the suppuration of the middle ear. The discovery in these cases later in life of anatomical variations in the nose, such as a deviation of the septum, should not lead us to hold this responsible for the middle ear condition, nor have we any right to expect that the correction of these anatomical variations would influence in any way the middle ear process. Entirely too much stress has been put on the supposed relation existing between conditions in the nose, such as here referred to, and chronic middle ear processes. If we find in the examination of an ear case a nasal obstruction which is actually interfering with the proper nasal respiration it is of course our duty to advise to have this corrected; not, however, for the improvement of the ear. It is doubtful whether any of these intra-nasal operations influence in any way the progress of a chronic middle ear condition.

A CASE OF CHRONIC PROGRESSIVE BULBAR PARALYSIS.

R. H. Good, M.D.

Mrs. R. M. G., from Arizona, widow, aged 50 years, came to my office, Nov. 10, 1909, with the following history: During August, 1909, she began to have some difficulty in speech and became easily fatigued on using her voice at length. She also complained of a feeling of fullness and difficulty in swallowing and breathing.

Her condition gradually became worse and on Nov. 19, 1909, she reported as follows: Always enjoyed perfect health, has had no children and no miscarriages; family history negative. At this time she could not articulate distinctly, yet one could understand what she was saying. There was some difficulty in breathing, becoming readily fatigued on using the voice. Liquids would occasionally pass into the nose on swallowing. She had coughing spells when swallowing solid food. The lips could not constantly be kept closed so that there was a dribbling of saliva.

On examination the mouth appeared large and the lips thinner than normal. The tongue could be protruded with difficulty, the surface showed folds or depressions and there was a constant tremor of the muscles of the tongue. The patient could not lift her tongue up to the hard palate. The senses of taste, touch and pharyngeal reflex were present. The soft palate moved sluggishly; the larynx appeared normal but the muscular movements seemed to be impaired. The deltoid muscle as well as the muscles of the hand were weakened. The thenar and the hypothenar eminences were flabby and flattened and the intercarpal muscles showed signs of atrophy.

The reflexes of the arms and legs were somewhat exaggerated. Sphincters not disturbed. Patient has had a chronic catarrhal otitis media for the past fifteen years but has observed no special progress during the past year. Vision normal and fundus findings negative.

Cerebration normal. Nerves involved were facial, hypoglossal, glosso-pharyngeal, pneumogastric, and the upper spinal, all of which have their motor nuclei in the medulla and anterior horns of the spinal cord.

The patient has gradually become worse until at the present time she is unable to take solid food and even has choking and coughing spells when swallowing liquids. Her breathing is labored and she frequently wakes up during the night with smothering sensations. The intensity of her voice is diminished, the pitch lowered and her articulation cannot be understood.

The onset of the disease was gradual and the involvement bilateral and the disease slowly progressive. No symptoms of brain tumor. Wassermann negative. Potassium iodid of no benefit, so that we have here a clear case of degeneration of the motor nuclei in the medulla.

DISCUSSION.

Dr. J. C. Beck saw the case with Dr. Good in March and thought it a case of progressive muscular atrophy. The Wassermann test is not affected by the administration of potassium iodid.

Dr. A. Heyn has studied this case and considers it one of progressive bulbar paralysis; a rare disease occurring about the age of fifty with a doubtful etiology. The lesion in this case is not confined to the medulla but has extended to the spine. There is an atrophic condition of the upper extremities. Patellar reflexes are somewhat increased and on one side there is a slight ankle clonus. There is no Babinsky. This increase in reflexes indicates that the process is extending to the spine. Bulbar paralysis is frequently the final step of some spinal diseases. The spinal form of progressive muscular atrophy begins in the upper extremities and later passes to the medulla. This case is connected with amyotrophic lateral sclerosis. The interesting feature here is that the bulbar symptoms developed first and the process later extended downwards instead of the reverse as is the rule. The electrical tests show the reactions of degeneration of the muscles of the arm and hand but not in the face. The entire nervous mechanism is not yet entirely degenerated in any part. There is still some function in every group of muscles. Pathologically the process is an infection of the medulla. The motor nuclei of the facial nerve, the glosso-pharyngeus, the vagus, and the spinal accessory are involved. There is atrophy of muscles without evidences of inflammation. Slowly progressing condition excludes hemorrhage. Tumor is excluded by the absence of tumor symptoms, choked discs, etc. The prognosis is bad. The duration as a rule is from one to three years. Patients die from paralysis of the heart when the atrophic condition finally attacks the motor nucleus of the vagus.

PAPILLOMA OF THE LARYNX COMBINED WITH OPEN FORAMEN OVALE IN THE HEART.

Reported by J. HOLINGER, M.D.

The coincidence of papilloma of the larynx of children with a patent foramen ovale in the heart has been repeatedly described and always proved fatal. These children from their birth are much more cyanotic than the papilloma would lead us to expect.

Report of case: child, aged 3 years, breathes very laboriously. Intubation and direct laryngoscopy failed. Tracheotomy brought relief, but the child died after three days. Post-mortem besides papilloma of the larynx, shows emphysema, highest tracheitis, and bronchitis, open foramen in the heart. The failure of intubation and direct laryngoscopy was due to two very short glosso-epiglottic bands, which caused the entrance of the larynx to contract to a slit as soon as the tongue was pushed forward.

A CASE OF RECOVERY FROM GENERAL PURULENT MENINGITIS.

A woman aged 28 years had acute otitis media. A few days later all the symptoms of a general meningitis, sleeplessness, severe headache, stiffness of the neck, brain-pulse. The large perforation was in Shrapnell's membrane, and the purulent secretion came directly from above. The diagnosis was purulent meningitis following acute purulent otitis. An operation was refused, therefore aspiration according to Professor Bier was applied. After three weeks all symptoms had disappeared and she attended to her household as usual. Seven months later again otitis media, two days later meningitis, death after four more days. The post-mortem shows the acute general meningitis and encephalitis. Over the tegmen tympani the dura, pia and brain are adherent in one mass to an opening in the bone. Old grayish streaks were found over the base and large parts of the convexity of the pia, showing the large extent of the meningitis seven months previous.

DISCUSSION.

Dr. N. H. Pierce does not see how this case can be accepted as a proof that purulent meningitis ever recovers. The fact that the patient died supports the contention that cases with purulent meningitis always succumb. The case is one of intermittent meningitis. This condition originating in a suppurative ear disease may develop a dozen or more attacks before the condition terminates fatally, and unless an operation is performed the majority of them eventually die from a general purulent meningitis. The death occurs because of the extension into the cortex producing an encephalitis. Cases of serous meningitis do recover but a general purulent meningitis does not terminate in recovery. Dr. Pierce did not believe that the papilloma of the larynx had anything to do with the fatal termination in the case of the child.

Dr. G. E. Shambaugh:—The various problems connected with inflammation of the meninges associated with diseases of the middle ear are attracting a great deal of interest at present. It has been established that many cases presenting evidences of meningitis which were formerly accepted as proof that the patient had a fatal malady, may recover if the proper operative procedures are carried out soon enough. It appears that cases of serous meningitis may terminate spontaneously in recovery. That cases suffering from a diffuse suppurative meningitis may also recover if the focus of the infection in the ear is removed and the proper drainage established seems also to be possible. Whether a case of purulent meningitis more or less circumscribed may not tend to recovery in certain cases where nature has provided drainage, is the question which this case of Dr. Holinger's throws light upon. This case is one of very great interest, as the pathological findings and the history seem to suggest that a case of circumscribed purulent meningitis may tend to spontaneous recovery. That the patient finally succumbed to a recurrent attack which resulted in general diffuse meningitis cannot be accepted as proof that the recovery from the previous attacks might not have been permanent had the patient not suffered from an acute exacerbation of the middle ear process.

Dr. A. Heym:—A meningitis may be latent then become acute again. This may have been what took place in Dr. Holinger's case.

Dr. J. Holinger in closing:—Professor Schwartz at the Congress in Budapest contended that when a case of meningitis recovered it was serous and not purulent. In the case here reported the pus was seen coming from the roof of the attic. It did not come from the antrum. The woman was well for seven months after the first attack, did her work and complained of no trouble. Of course she had the suppurative otitis to which the meningitis was secondary. She recovered from the first attack but that the second attack of meningitis was but a continuance of the first I do not believe. The changes in the pia produced by the first attack were very clearly marked.

JO DAVIESS COUNTY.

The Jo Daviess County Medical Society met in Stockton July 21, 1910. The members and their ladies met in the parlors of Dr. Stafford's residence where luncheon was served, and at 1 o'clock the society assembled on the lawn and the following responded to roll call: Drs. Kreider, I. C. Smith, Kaa, Stafford, Keller, Renwick, Hillard, D. G. Smith, Cottral, Boots, Guthrie, Melhop, Miller, with Dr. Lovewell of Chicago, and Dr. Brown of Sycamore.

The scientific program was then taken up, and Dr. Kaa read a paper on "The Relation Between Disease of the Mouth and the Systemic Diseases." Dr. Boots read a paper on "A Study of Hyperchlorhydria," with report of a case. Dr. Lovewell, of Chicago, read a paper on "Some of the Newer Ideas in the Physiology of Digestion in Health and Disease," and presented a specimen of a corset liver with gall-stones. All these papers brought out interesting discussions by the members present and a vote of the society requested that Dr. Lovewell's paper be printed in the *ILLINOIS MEDICAL JOURNAL*.

At 5 o'clock the society was invited to the dining room of the Great Western Hotel and all participated in a banquet. The ladies spent the afternoon in auto-mobiling and seeing the sights of the vicinity. D. G. SMITH, Secretary.

MACOUPIN COUNTY.

The July quarterly meeting of the Macoupin County Medical Society was held in Carlinville, convening in the reading room of Masonic Hall at 11 a. m. After organizing an adjournment was taken for dinner and the afternoon session was held in the opera house. The following were present: Drs. W. J. Donahue, of Plainview; Riffe, Cowan and Mitchell, of Girard; T. W. Morgan, of Virden; Gross and King, of Gillespie; Theodore Renner, of Benld; J. P. Denby, J. S. Collins, C. J. C. Fischer, J. Palmer Matthews and Lucinda H. Corr, of Carlinville; J. B. Liston, of Shipman.

A paper was read by Dr. George T. Palmer, of Springfield, Ill. The meeting closed with an address by Dr. W. J. Donahue, of Plainview, president of the Association. The next meeting will be held in October.

OGLE COUNTY.

The regular quarterly meeting of the Ogle County Medical Society was held in the Circuit Court Room in the Court House, at Oregon, July 20, 1910, at 1:30 p. m. President J. M. Beveridge called the meeting to order. The secretary's report of previous meetings was read and approved. The following members of the society were present: Alrutz, Beard, Beveridge, Beigham, Hanes, Houston, Krebs, Kretsinger, Maxwell, Parkhurst, and Rice. This being a popular address to the profession and public by Dr. J. W. Pettit, Ottawa, Ill., a large number of visitors were present. The following officers were duly elected for the ensuing year: President, Dr. Charles Maxwell, Polo; vice-president, Dr. S. D. Houston, Polo; secretary and treasurer, Dr. J. T. Kretsinger, Leaf River; delegate, Dr. J. M. Beveridge, Oregon; alternate, Dr. L. A. Beard, Polo; censor, Dr. W. W. Hanes, Mount Morris.

Dr. J. W. Pettit, of Ottawa, read an excellent and instructive paper on "The Tuberculosis Problem." Dr. Pettit suggested that the society select a committee of five to meet a state committee later in the season to form a society for the treatment and prevention of tuberculosis.

Dr. J. M. Beveridge was appointed to select such a committee. On motion of Dr. Beard, a vote of thanks was tendered Dr. Pettit, for his valuable paper. The society adjourned to meet in Polo, the third Wednesday in October, 1910.

DR. J. T. KRETSINGER, Secretary.

WAYNE COUNTY.

The Wayne County Medical Society met June 29, and was largely attended. The meeting was held to celebrate the eighty-first anniversary of the birth of Dr. W. M. Johnson of Johnsonville, the venerable president of the society. Dr. C. E. Johnson, son of the president, entertained the members on the lawn of his beautiful home. A paper by Dr. C. O. Truscott on "Disease Germs and Germ Diseases" was read and recommended for publication in the ILLINOIS MEDICAL JOURNAL. Dinner was served to the entire society and several ladies who accompanied the members. After dinner Dr. W. M. Johnson gave an interesting review of his professional career, covering a period of fifty-six years, he was then presented with a new silk hat of the variety and style he has always worn. After a delightful session the society adjourned to meet at Fairfield at the usual time.

J. P. WALTERS, Secretary.

DISEASE GERMS AND GERM DISEASES.

C. O. TRUSCOTT, M.D.

This interesting and important subject is entirely too great to be treated in one paper, hence I will treat of disease germs at this time, and consider their pathologic results more in detail in the future.

The importance of disease germs is due to the fact that certain ones have been shown to be the cause of certain diseases and probably future investigation will show that such is the case to a far greater extent than we are yet aware. In fact, I believe that it will eventually appear that disease is essentially due to germs, but the problem or pathologic causation is very complex and often obscure, and the matter of the resistance of the organism which is attached must be regarded, as well as the attacking force, the micro-organism.

The process of the successful invasion of the animal body by these living agents which multiply and then cause pathologic conditions, by forming toxic substances, is known as infection.

These agents are mainly micro-organisms, and comprise hyphomycetes, or molds, blastomycetes or sprouting fungi, and schizomycetes, cleft fungi, to which last class belong most of the microscopic pathogenic organisms.

These organisms consist of small vegetable cells, which have no chlorophyll nor nucleus and they are divided according to their shape, into cocci, bacilli and spirilli. Cocci are commonly of spherical shape, and are named according to the manner of the grouping of their cells. The diplococci are grouped in pairs, the tetrads in fours, the sarcina in masses of eight or more, the streptococci in chains and the staphylococci either singly or in groups of many cells.

This individual grouping of the cocci is not always constant, but it may vary considerably especially under cultivation, and the usual manner of grouping is not as important as is the action of the individual micro-organism. Bacilli are rod-shaped bacteria, which vary in size and shape, some being immobile and others being mobile by reason of cilia or flagella.

The bacillus tuberculosis and anthracosis are well known examples of this class of bacteria. Spirilli are curved forms of bacteria, the best pathogenic example of which is the cholera vibrio or comma bacillus of Asiatic cholera.

Some of the most important bacteria which cause specific diseases are the following: Streptococcus erysipclatis, causing erysipelas; streptococcus pyogenes, causing acute abscess, infective endocarditis, septemia, pyemia and carbuncles; diplococcus lanceolatus pneumoniae, causing pneumonia; gonococcus, causing gonorrhea; diplococcus intracellularis meningitidis, causing cerebrospinal meningitis; bacillus anthracosis, causing anthrax; bacillus tuberculosis, causing tuberculosis; bacillus leprae, causing leprosy; bacillus diphtheriae, causing diphtheria; bacillus typhosis, causing typhoid fever; bacillus influenzae, causing influenza; bacillus pestis, causing bubonic plague; bacillus anthracosis, causing anthrax; bacillus tetani, causing tetanus; bacillus edematus maligna, causing malignant edema; vibrio cholerae Asiatica, causing Asiatic cholera; spirillum obermeieri, causing relapsing fever.

Then there are certain micro-organisms which are allied to the bacillus typhosus, for instance, the bacillus coli communis, which occurs normally in the intestine, yet in certain conditions becomes a pathogenic bacillus. Another instance is the bacillus enteritidis which has been found in some cases of meat poisoning, and the bacillus dysenteriae, which is the cause of a form of dysentery.

There are various other pathogenic micro-organisms, but these just mentioned are the most important and best known. The growth and degree of vitality of bacteria in the body and especially in an artificial medium, depend upon the temperature, the amount of oxygen present, the presence or absence of sunlight and the nature of the nutrient medium.

The most of the pathogenic bacteria grow at a temperature of from 98° to 100°, the usual temperature of the body. The typhoid and colon bacilli will endure very low temperature, whereas the glanders bacilli lose their virulence at a temperature below 98°.

No bacillus will endure a temperature of 140° long in a liquid medium, but to kill spores requires 212° and a longer exposure. The amount of oxygen in the nutrient media of bacteria is a marked factor in their growth. Some of them grow in the presence of oxygen, and are termed aerobic, while others grow in the absence of oxygen, and are called anaerobic. The most of pathogenic bacteria are aerobic, yet they can grow without oxygen, hence they are called facultative anaerobic. Examples of this are the pus cocci, pneumococcus, bacillus anthracis, the bacillus typhosus, the bacillus coli communis, and the vibrio of Asiatic cholera.

The tetanus bacillus is an example of the other type. It grows in the absence of oxygen, hence is called an obligatory anaerobe. However these facts are not of great clinical importance as the presence or absence of oxygen in the body is not the principal factor in the control of bacterial growth.

Bacteria and even their spores, are destroyed by sunlight, either direct or diffused. For instance the tubercle bacillus is killed by an hour's exposure to direct sunlight, and in from five to seven days' exposure to diffused sunlight. The typhoid and the colon bacilli, the bacillus pyocyaneus, and the cholera vibrio are destroyed by from four to seven hours' direct sunlight, and anthrax spores are killed by from two to six hours' exposure to direct sunlight, or to an electric arc light. These statements apply to culture work, whereas the destruction of bacteria by sunlight when they are in the excretions, requires a much longer time. In regard to the nature of the nutrient media of the pathogenic bacteria, which can be cultivated, there are certain essentials. It must contain some proteid substances, must be slightly alkaline or neutral, and must contain a certain amount of mineral salts in practically the same proportion as they are found in the blood. These salts are the chlorids of sodium and potassium, and the phosphates of calcium and magnesium.

A living cell cannot exist without chlorid of sodium. It and calcium phosphates are a necessity for the vitality of protoplasm. Pathogenic bacteria are highly specialized micro-organisms, which have evolutionized from forms similar to the non-pathogenic bacteria by reason of their environment in disease. The most of them, which cause a definite disease, pass all their active life in the animal body and during the course of the diseases which they cause. Usually they do not live any length of time in the dead body, and some may even disappear before death occurs, as in some cases of tetanus and diphtheria, while on the other hand some of them have great vitality outside of the body, such as the pus cocci, and the anthrax, tetanus, typhoid and colon bacilli. The anthrax and tetanus bacilli produce spores outside of the body, but the bacteria of tuberculosis and glanders have a very short existence outside of the body, neither can they grow outside of the body, except in the proper culture media. Even the colon and typhoid bacilli will not live for any length of time in sewage water or soil.

There is a great variability in the virulence of the same forms of bacteria, which fact is of great clinical interest, as it gives us an insight into the different

degrees of severity of different cases of the same disease, because of the different intensity of the infective agents.

The virulence of bacteria is measured by their power of producing their characteristic chemical poisons, which they do to the best advantage in their natural habitat, the animal body. All forms of bacteria tend to degenerate sooner or later in culture. For instance, the pneumococcus and streptococcus lose their virulence in one or two days in artificial culture. The virulence of bacteria may be attenuated or increased, both artificially or naturally. Artificial culture causes attenuation, and even innocuousness.

Attenuated growth is caused by heat, or the use of certain antiseptics. Increased virulence is mainly caused by passing the bacteria through a series of animals in which manner twenty or thirty fold increase can be obtained and a fatal result will occur in sixteen or eighteen hours, apparently from a fatal dose of the chemical poison produced by the bacteria. Another method of increasing bacterial virulence is to combine the chemical poison of another bacterium with the bacterium in use, and the passing of the combination through a series of animals causes an astonishing degree of virulence. For instance, diphtheria toxin can be produced which is as deadly as the venom of the cobra. This variability of virulence also occurs in bacteria which have their habitat in the animal body, and this in a measure is one of the factors which governs the variety of disease. As previously stated, bacteria produce their pathologic results by means of the chemical poisons which they form, some of which are of a highly complex nature and are closely related to certain poisons produced by animal cells, such as snake venom, and by certain plants, as abrin from the seeds of the abrus precatorious or prayer bead, and ricin the toxic principle of the seeds of the castor oil plant. Our knowledge of the nature of these toxins is very imperfect, and we cannot chemically define them, but it is their more or less rapid formation, according to the activity and growth of bacteria, which causes the symptoms of infective disease.

These bacterial poisons are divided into two groups: one group which consists of the products of the digestion proteid tissues by the bacteria, and hence it is called the digestive group of bacterial poisons. In the other group, the poison is either intra-bacterial, or it is an excretion of the bacteria. This excretory group is more toxic than the digestive group, and both groups are usually associated. As regards the general action of bacterial poisons, there is no immediate effect, after infection, and for instance by injection, because there is an incubative period, after which occur the symptoms characteristic of the infective agent. These poisons may cause fever, or a great depression of temperature, blood destruction, tissue degenerations, and have a selective action upon the nervous system and heart. It is very characteristic of these toxins that they have a selective affinity for special organs.

The products of the digestive group of bacterial poisons are mainly albumoses, which are constantly found in the body after death from infective diseases, and they are excreted in the urine. These toxic albumoses seem to be an important factor in some diseases, as anthrax, diphtheria, and pus infections. The poisons of the bacterial excretion group, are essentially different, and far more powerful than those of the digestive group. The following table gives an idea of the comparative toxicity of poisons. The figures represent the parts in weight of a rabbit or guinea pig, which will be killed by one part of dried poison: cobra or tiger snake, 4,000,000; diphtheria toxin, 4,000,000; ricin, 1,500,000; viper, 80,000 to 2,000,000; adder, 250,000; anthrax and cholera albumoses, 3,000.

The study of infection, as found in human diseases, especially is very interesting and important, and in order to prove that bacteria are the cause the following facts must be determined: 1. The bacterium must be constantly found in the disease. 2. It must be obtained from the lesions of the disease, or from pure cultures of the blood and tissues. 3. It must reproduce the disease in susceptible animals. 4. It must be obtained from these animals in pure culture. 5. The chemical products, with an identical physiologic action, must be obtained from artificial cultures of the infective agent, and from the tissues of persons or

animals, who have died of the disease. 6. A specific serum reaction must be obtained with the infective agent.

In most of the infective diseases the first four facts are usually demonstrated, except that in some instances, as cholera and typhoid fever, there are no animals which are known to be susceptible to these diseases. The specific serum reaction, when it can be obtained is conclusive proof of the specific nature of the infective agent. The pus cocci are a good instance of proof of the first four propositions. They are constantly found in abscesses whence they can be obtained in pure culture which can reproduce abscesses or septicemia in animals, from which the cocci can be secured in pure culture. This experimental proof applies also to the pneumococci, the bacillus anthracis, the bacillus mallei, the bacillus pestis, and with the bacilli of diphtheria, tetanus, actinomycosis and their corresponding diseases. Diphtheria and tetanus furnish proof of the fifth proposition, previously stated, as there are chemical products found in fatal cases of diphtheria, which produce a paralysis due to nerve degeneration similar to that caused by the products of the diphtheria bacilli from culture media, and the products of the tetanus bacillus cause tetanic spasms, although ordinarily the tetanic poison cannot be found in the corpse, as the tetanic bacilli disappear before death. In the case of Asiatic cholera, the vibrio is constantly found in it, and when Emmerich and Pettenkofer swallowed vibrio cultures, diarrhea resulted, the stools containing the vibrio, and a worker with the vibrio at Hamburg contracted fatal cholera from a vibrio culture at a time when there was no cholera in Germany.

In some infective diseases the bacteria have not been cultivated, for instance leprosy, relapsing fever and malaria. In malaria, the proof of the plasmodium being the causative agent is as follows: It is constantly present in the red blood corpuscles during the acute disease. It develops in association with the symptoms of the disease, and with the recurrence of the attacks. It has been reproduced in a healthy man by mosquitoes, which have been artificially fed with the tertian parasite. I will treat some infective disease more in detail in some future papers.

In conclusion, I will say that this field of medical labor offers the greatest promise of advancement in the knowledge of the causes, nature and treatment of disease.

A CASE RECORD.

W. E. WALSH, M.D., MORRIS, ILL.

The patient is 18 years old and measures 4 feet 6 inches in his stocking soles instead of 5 feet 6 or 8 inches. You will notice that the skin is dry, slightly scaly and harsh. The hair is coarse. His face is moon shaped with excessive deposits of fat at the angle of the jaw. The whole body is fat with large pads on the back of the neck and pubes and the supraclavicular spaces are full. His pulse runs from 80 to 82, standing, and sometimes goes as low as 70.

These symptoms have persisted for six years that we know of and possibly before that, as his height is that of an average boy of 11 years. Together with these symptoms of myxedema we have an enlarged thyroid gland, especially large and soft on the right side, tremor, heart fast on exertion, and slightly dilated. The hair although coarse has lustre and strength, the face has good features and expression with strong mental capacity. The hands are tapered and small instead of being large and flabby. All that he complains of are slight headaches and dizziness and fast heart on continuous exertion. Practically all these symptoms have persisted for six years.

The patient was born in Grundy county on a farm. His parents are normal size, his mother being stout and his father thin. Four brothers and two sisters are all medium size and in good health. At the age of 5 he had a severe bronchial pneumonia, made a complete recovery and started to school at 6 and continued at school regularly until two years ago, always standing at the head of his classes in all the eight grades, his application being exceptional and his

ability above the average. At the age of 8 he had adenoids and tonsils removed. At the age of 12 it was noticed that the growth was arrested or slow and in the Fall of 1906, at the age of 14, the patient applied to me for headache and a large neck. Correction of refraction was ordered for the headache but with no benefit. On account of the mucous pads and the arrested growth 2.5 grains of Armour's thyroid tablets were given three times a day and continued at intervals for several months, stopping when the heart went over 100 and resuming it again after it had fallen to 80. In March, 1907, three weeks after discontinuing the thyroid, he became suddenly sick with headache, fever, nausea and prostration with tenderness and enlargement of the right thyroid. His blood pressure, which before had been between 120 and 130, now rose to 140 and his heart rate was 120-130. At this time the case was referred to Dr. Sippy of Chicago, who found a dilated heart, tremor and prostration, all indicative of hyper-thyroidism. The acute symptoms lasted for three weeks and then the former and present condition resumed itself.

During the last three years all forms of medication have been used in an endeavor to increase his growth. He has been under the care of three Chicago consultants and two others, one in Joliet and one at Springfield. Ergot, iodo-nucleoid, malt and linseed oil and some thyroid have been given but he has only grown one-half inch in the last four years.

The case evidently presents features of hypo-thyroidism with symptoms of hyper-thyroidism and these conditions have persisted for six years, which is rather contrary to the present generally accepted theory of the functions of the thyroid gland.

NEWS OF THE STATE

PERSONAL.

Dr. S. M. Parr has removed from Fountain Green to Carthage.

Dr. G. W. Fuller, of Paris, has removed to Missoula, Montana.

Dr. Chas. True, Kankakee, is in a serious condition from a stroke of paralysis.

Dr. Elbert E. Clark, Danville, sailed August 6, to attend clinics in Germany.

Dr. Wm. J. Cheany, Petersburg, has been appointed county poor physician.

Dr. J. Scott Brown, has removed from 284 Lake Street, River Forest, to Burnett, Wis.

Dr. B. C. Corbus, Chicago, has gone to Berlin to investigate the new Ehrlich treatment.

Dr. Francis E. Melugin, Thomson, recently underwent an operation at the Clinton Hospital.

Dr. Clinton Helm, a practitioner of Rockford for thirty years, was recently stricken with paralysis.

Dr. and Mrs. I. A. Abt, of Chicago, sailed August 20, for Europe. They expect to return in November of this year.

Dr. V. H. Podstata has taken an office at 100 State Street, Chicago, and will limit his practice to nervous and mental diseases.

Dr. Henry R. Harrower, editor of the *American Journal of Physiologic Therapeutics*, has removed from Kankakee to Park Ridge.

Dr. George Sultan has become a candidate for county commissioner of Cook County. His candidacy is endorsed by many leading physicians.

Dr. Will H. Perry has been appointed pension examining surgeon at Sterling to fill the vacancy caused by the death of Dr. Alexander C. Smith.

Dr. A. Fields, Stonington, Christian County, has gone to London and Paris for post-graduate work. Dr. W. T. Seeley, of Chicago, will have charge of his practice.

Dr. William M. Johnson, Johnsonville, nestor of the medical profession of Wayne County, has been elected president of the county medical society. Dr. Johnson is 81 years old.

Dr. H. T. Hardy, long called the "Dr. MacClure, of Kaneville," with reference to the famous doctor in "Beside the Bonnie Brier Bush," underwent a surgical operation for gall-stone at Wesley Hospital, Chicago.

Among the Chicago members of the American Society of Clinical Surgery who recently visited England as the guests of the English surgeons,

Drs. A. D. Bevan, Frank Billings, M. L. Harris, and L. L. McArthur have returned.

Dr. Milton J. Rosenau, professor of pathology in Harvard University Medical School, is to deliver the Harris Lectures for 1912 at Northwestern University. These lectures were established by the gift of Mr. Norman W. Harris.

NEWS ITEM.

—DR. M. M. HILL, of Taylorville, has removed to Winfield, Kansas.

—It is reported that Dr. L. D. Howe, Cherry, will locate in Streator.

—HENRY P. BAGLEY, M.D., has taken an office at 103 State Street, Chicago.

—Dr. J. E. Tuite, Rockford, fractured his right arm at the wrist while cranking his automobile.

—The cornerstone of the new Monmouth Hospital was laid August 2. J. B. Brown delivered the address.

—The new hospital for consumptives at the State Hospital for the Insane, at Bartonville, is nearing completion.

—The new Monmouth Hospital at Monmouth is now under construction. Dr. Edward L. Mitchell is a member of the building committee.

—As a first step toward the establishment of a much needed hospital at Sterling, the city council recently appropriated \$500 to be used for hospital purposes.

—The great need of a public hospital in Sterling has been brought to the attention of the city council and the institution all ready in the city will probably be taken over by the city government.

—Dr. Stephen W. Cox, of 100 State Street, Chicago, has been appointed United States examining surgeon on the first pension board of Chicago, to take the place of the late Dr. John W. Tope, of Oak Park.

—Dr. Archibald G. Servoss has resumed the practice of medicine at Havana, after an absence of several months. He has been located in North Dakota, in which state he purchased a 320 acre farm a year ago.

—Plans for the new \$50,000 Methodist Hospital at Peoria have been completed and bids asked for. The plans provide for a four story building in the renaissance style, 70 by 80 feet. The kitchen will be placed on the top floor.

—Some time ago the Illinois State Board of Health declared the National Medical University, one of the Chicago "night" medical schools, not in good standing. The dean of this school now charges that he paid a fee to a Chicago lawyer-legislator for the apparent purpose of influencing the State Board to reinstate the school. This dean further charges that five or six other medical colleges in Chicago are paying money to keep in the good graces of the State Board of Health. All of the charges are denied, both generally and specifically, by the board and the governor and state's attorney have each started investigations of the whole matter.

PUBLIC HEALTH.

—Dr. Leslie L. Lumsden, who is conducting the campaign against typhoid fever in Chicago, requests a meeting of physicians to discuss the situation. The medical societies of the city have no regular meetings during the summer and it is desired that special meetings be called.

—Dr. Augustus R. Reader, health officer of Aurora, has issued to householders and property owners of the city a set of eleven rules in regard to personal hygiene and public sanitation which have attracted attention throughout the country. Rule eight requests all persons to bathe at least once a week.

—Evanston claims to be the healthiest city in the state, the death rate for the past year being reported as only nine per 1,000 of population.

—Since the abandonment of the old Harrison Street Emergency Hospital, Chicago, two rooms have been fitted up in the Harrison Street Police Station for emergency hospital purposes, in charge of Drs. Charles D. and Clarence H. Wall. As many as ten to fifteen minor surgical cases have been cared for each day.

—At Rockford, Corporation Counsel Rew has rendered an opinion that inspection of public school children should be done under the supervision of the city health department instead of the school board and that the board of education cannot legally provide for medical inspection. It is said that State Attorney-General Stead and State Superintendent Blair hold the same opinion.

—A laborer in a railroad camp at Williamsfield is said to have been quarantined for smallpox in Galesburg for twenty-seven days. Upon being released as cured he spent some time in Monmouth. Not feeling well, he went to Rock Island, where the county physician diagnosed his case as smallpox, and sent him to the pest house. Was this a relapse or did the Galesburg authorities release him before he was well?

—The question of cooperation of the government in enforcing the law which prohibits dumping refuse in the lake within the eight-mile limit, recently referred to the chief engineer of the United States Army, has been answered in a communication from General Bixby, chief engineer, in which he says that the city of Chicago must mark the zone within which dumping is illegal by buoys and must provide inspectors to see that the law is enforced, as no money has been appropriated by Congress to enable the War Department to assist in the matter.

—The Chicago Tuberculosis Institute is endeavoring to raise a mid-summer fund of \$2,500 with which to support the work until fall. The eight free tuberculosis dispensaries are handling from twenty to sixty patients a day. Every month about 240 new cases are examined and the eleven nurses are making nearly 1,700 visits a month in homes of the patients. In addition three of the nurses devote a portion of their time to three open air schools for anemic children, maintained at the Libby School, Penn School and Lake View High School. There are 35 children in each school.

—According to the Bulletin of the Chicago Health Department, July had a 6 per cent. higher death rate than the average of that month for the last ten years, and 23 per cent. higher than July, 1909. The weather during July averaged 3.6 degrees above the normal of the month. It was the hottest July in nine years, and the average temperature was exceeded only once in thirty-nine years. While the death rate in infants was 42 during July this year, it was lower than the death rate in 1897, when it was 71 per 10,000 population, and lower than 1901, when the death rate was 44, making the rate 45 per cent. lower than in 1897 and 5 per cent. lower than in 1901, in both of which years the temperature, though high, was not so high as in July this year.

—John J. Davis, assistant state entomologist, in his experiments in the destruction of flies and fly larvæ, has found that a solution of iron sulphate is probably the best and cheapest agent. He advocates that experiments with this material in preventing the multiplication of flies should be conducted by the health authorities of Chicago in certain limited districts, and believes that a noticeable effect will be produced on the prevalence of intestinal diseases in the experimental area. In an experiment at Dunning a year ago, Dr. Pollock kept one ward screened from flies during the season. In that ward there was one case of intestinal trouble which lasted three days. In the next ward, which was not screened, there were seven cases in the same length of time and every one of these cases lasted from three to seven weeks. A fly hatchery has been added to the city laboratory and Dr. John W. Viers is conducting experiments in the destruction of fly larvæ. Flies are being hatched in wire cages. It has been found that a phenol solution sprinkled on hatching grounds, on garbage and on manure will kill them.

—At the meeting of the Summer School at Havana, July 26, Dean E. J. Townsend, of the University of Illinois, in an address on "Science and Public Service," suggested a plan for the establishment of an experiment station of sanitary science and preventive medicine, to work alongside of the agriculture and engineering experiment stations of Illinois. He declared also that education of the public to the sources of danger is equally important. He called attention to Chicago as a good illustration of what a scientific and efficient leadership in sanitation can accomplish, pointing out that Chicago has now the lowest death rate of any American city of more than 350,000. His plan for an experiment station included the following features: That it should supplement the work done by the state and municipal boards; that a laboratory of physiologic chemistry should be maintained, in which questions of human nutrition could be studied; for the conduct of a bacteriologic laboratory; for the creation of a laboratory of sanitary science in which problems arising from water supplies, sewage disposal, etc., and their relations to public health should be investigated; for the establishment of a department of medical research, not for teaching, but for inquiry into the cause and prevention as well as cure of such diseases as have not yielded to medical treatment.

MARRIAGES.

WALLACE BLANCHARD, M.D., to Miss Gahfea Brandt, both of Chicago, July 12.

JAMES CLINTON RUSSELL, M.D., to Mrs. Ella Thomas, both of Oakford, July 4.

CARL S. MONTGOMERY, M.D., Stockland, to Miss Leona B. Garrett, of Momence, June 30.

HUGH O. JONES, M.D., Chicago, to Miss Nettie Perry, of Oshkosh, Wisconsin, July 27.

DR. DANIEL E. RICARDO, of Chicago, to Miss Justine Theresa Friend, of Cincinnati, Ohio.

HARRY D. CARTMELL, M.D., to Miss Oradella DeMoulin, both of Greenville, August 11.

C. HUGH MCKENNA, M.D., to Miss Evelina Margurite Beauvis, both of Chicago, August 19.

LEWIS W. DUDLEY, M.D., Elgin, to Miss Marion T. Connell, at Fond du Lac, Wis., June 29.

FRANK BLAIR LOVELL, M.D., Gibson City, to Miss Helen Lewis Brewster, of Wheaton, June 30.

LOUIS GRAYSON HARNEY, M.D., East St. Louis, to Miss Lela Elinor Workman, of St. Louis, June 4.

OTTO DARWIN DIEHL, M.D., Centralia, to Miss Marjorie Nies, of Virginia, Minn., at Chicago, July 16.

MIAL R. LYMAN, M.D. Bad Axe, Michigan, to Miss Elizabeth E. Deno, of Saginaw, at Cuba, Ill., June 30.

DEATHS.

CHARLES H. DYER, M.D., Eclectic Medical Institute, Cincinnati, 1896; died at Winchester, Ill., July 13, from heart disease, aged 37.

C. H. DYER, M.D., Eclectic Medical College, Cincinnati, 1896; died at his home in Winchester, July 13, 1910, aged 36 years, 4 months and 29 days.

JACOB RANDALL (license, 1878. Ill.); said to have been the oldest physician in Washington County, Illinois; died at Okawville, Ill., June 8, aged 85.

JONATHAN TULLIS HALL, M.D., Indiana Medical College, Indianapolis, 1876; died at his home in Sidell, Ill., July 10, from meningitis, aged 58.

JAMES HENRY, M.D., Bellevue Hospital Medical College, New York City, 1870; a veteran of the Civil War; formerly of LaHarpe, died at his home in Galesburg, August 2, from paralysis, aged 69.

ALEXANDER L. MURPHY, M.D., Jenner Medical College, 1909; of Chicago; was killed by a Pere Marquette train at Benton Harbor, Michigan, July 23, while on his way to Bangor, Michigan; aged 36.

NATHANIEL SEWARD PARSONS, M.D., University of Vermont, College of Medicine, 1874; a member of the Illinois State Medical Society; died at his home in Kewanee, August 8, from Bright's disease, aged 59.

LESTER M. CURRIER, M.D., Hahnemann Medical College, Chicago, 1873; a member of the Illinois State Medical Society; died at his office in Freeport, Ill., July 6, from gall-stones, aged 63.

HOMER C. SHAW, M.D., Starling Medical College, Columbus, Ohio, 1852; army surgeon during the Civil War, belonging to the Tenth Ohio Volunteer Infantry; died at his home in Homer, Ill., July 23, from paralysis, aged 82.

CHARLES N. DENISON, M.D., Cincinnati College of Medicine and Surgery, 1861; surgeon of the Eighth Illinois Volunteer Infantry during the Civil War; died at his home in Argenta, July 25, from papilloma of the bladder, aged 74.

IRA BROWN, M.D., University of Michigan, Department of Medicine and Surgery, 1858; Vanderbilt University, Medical Department, Nashville, 1876; a member of the Illinois State Medical Society; a veteran of the Civil War; a member of the Board of Pension Examining Surgeons at Watseka; died at his home in Milford, July 24, from heart disease, aged 78.

DR. C. M. DENNISON died at his home, in Argenta, July 25, 1910, aged 74 years. Dr. Dennison was a native of Connecticut; he graduated from the Cincinnati College of Medicine and Surgery in 1861, and came immediately to Illinois. He served as assistant surgeon in the Eighth Infantry during the Civil War, and had resided at Argenta for thirty-seven years. The Doctor had accumulated a fortune rated at more than \$200,000.

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ORIGINAL ARTICLES

HEREDITARY TRANSFORMATION OF SYPHILIS *

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CHICAGO

That syphilis may be transmitted to the offspring, as a strictly speaking hereditary disease, is a fact known almost as long as our knowledge of that disease itself. Yet, the specific manner of transmission, the relative influence of the father and the mother, have for centuries furnished material for a great deal of discussion and dissension. And even to-day, aided by those two epoch-making discoveries of the probable microbic cause of lues—the spirochete pallida and the now well known serodiagnostic methods as introduced by Wassermann, Neisser and Brock and developed and modified by many others—we have by no means arrived at a perfectly transparent conception of all the questions involved.

Modern studies in heredity have helped us in many ways to approach the problem of the transmission of lues. Thus we have learned that while alcohol has a specific effect upon the nervous system the neuroses produced by it in a previously normal individual and appearing again in the offspring, are not in reality inherited, but are due to an intoxication of the germ cells through alcohol, or rather of the special organ-forming germinal district from which the central nervous system is formed. Also it has been shown as more than probable that inebriety in the mother is much more deleterious to the offspring than paternal alcoholism. The very important investigations of J. Loeb on natural and artificial parthenogenesis prove that in the first stage of evolution heredity proceeds solely from the ovum and here also he considers the egg-protoplasm as of paramount importance as against the nucleus. His studies point clearly to the fact that ovum and sperma are not equi-potential for heredity, but

* Part of a Symposium on Heredity, read before the Chicago Medical Society, May 4, 1910.

that the former determines the inheritance of species characteristics, while from the latter originates, in all probability, individual features. As applied to the question of syphilis we can by analogy conclude that in the process of hereditary transmission, the mother plays by far the more important part. And this is borne out by ample clinical observations.

The terms hereditary and congenital syphilis are often used erroneously as equivalent. The former alone should be reserved to designate transmission by heredity in the sense that from the first moment of protoplasmic differentiation, the ovum is under the influence of the specific poison of lues.

What is termed congenital syphilis may be the result of an infection of the fetus even several months after conception, through the recently infected pregnant mother, and would therefore more properly be called post-conceptional lues, or it may be due to an infection of the, until then, healthy fetus during birth; in other words, a form of acquired lues. That the latter two forms of transmission occur there is no doubt. Occasion for infection intra-partum is often enough present and by some it is claimed the common occurrence of specific coryza, the so-called snuffles, may be the result of the aspiration of infectious matter by the newborn.

As to post-conceptional lues, opinions differ in regard to the term of pregnancy during which transmission of the disease may take place, and this involves the question as to the rôle of the placenta as a supposed filter against the specific organisms of lues, or its toxins. Clinical observation offers abundant proof of the fact that a healthy woman, infected during pregnancy with syphilis, will transmit her disease to her offspring even as late as the seventh month of gestation. Infection of the mother after that period will usually be without influence upon the fetus. This seems to show that the placenta, at least during the last stages of pregnancy, may form a wall against the transmigration of specific organisms, and actual microscopic examination has shown that in such cases the fetal part of the placenta is indeed free from any signs of pathologic changes, nor does it contain any spirochetes, while the maternal portion may contain them. An explanation for the failure of the placenta to act under all circumstances as a filter may be found in the fact that under the influence of a highly virulent infection it will lose its normal constitution and its normal attachment.

In considering hereditary syphilis, properly defined, the part of the mother in its transmission is easily comprehended and supported by daily clinical experience. We know that the recency of the syphilitic infection is in direct proportion to the influence upon the fetus. A recently infected syphilitic woman, unless vigorously treated, will, as a rule, experience a series of miscarriages at an early period of her pregnancy; gradually the carrying power will improve until children are born at term, either dead or with little chance for life; eventually, as the virulence of the disease subsides, living children may result with a gradually increasing capacity for survival.

Under the influence of proper treatment of the mother the chances of the offspring are enormously improved. Variations in the character of the several births depend, besides the influence of the treatment, upon the relative activity of latency of the disease.

In estimating the influence of the syphilitic father upon the offspring we are at once confronted with a mass of conflicting evidence and an almost hopeless schism of opinion. In former times the theory of the transmission of syphilis from the father to his children was accepted practically without discussion. Also it was held that such transmission was possible without the infection of the mother, and furthermore it was taught as practically a fixed law, that the mother of such a paternally syphilitic child could not be infected through nursing her own child: could not even be infected with syphilis from an outside source; in fact, that she had acquired immunity against lues. This, briefly, is the substance of the so-called law of Colles or Beaumès, as promulgated almost eighty years ago. Gradually doubts arose as to the proper interpretation of this apparently incontrovertible law. Observations were numerous, when such apparently healthy mothers showed gradually accentuating signs of cachexia; loss of hair, glandular swellings and irregular cutaneous lesions. Such cases were explained by a so-called *choc en retour*, a modified infection of the mother through her own fetus.

The first who had the revolutionary courage to vigorously oppose the long accepted theory of paternal transmission was Metzenauer, who in 1903, before the Vienna Medical Society, presented a powerful argument against it and proclaimed the mother as the only party responsible for the heredity syphilis of the child; i. e., that she, being first infected by her own husband, transmitted the disease by way of the placenta to her offspring. Almost alone in his stand, there were arrayed against him such clinicians as Neumann, Finger, Zeissl, Ehrmann, Lang, Kassowitz, Hochsinger and others, who in a memorable discussion extending almost over six successive sessions, brought into play a wealth of clinical experience which it is difficult to ignore. Metzenauer, however, upon purely clinical and anatomical considerations, anticipated by several years what has since been made much more plausible through the aid of the Wassermann test.

His chief points were: "We know of no infectious disease which is inherited from the father. The sperma of a syphilitic man is in itself not infectious. It is difficult to see why the child alone should be infected and why the mother should escape. Even in so-called paternal transmission the placenta shows characteristic pathologic alterations. The apparent freedom of the mother may be due to insufficient examination or the overlooking of early manifestations. The fact that 20 to 38 per cent. of all mothers of syphilitic children are supposedly well, while on the other hand 38 to 40 per cent. of tertiary forms in such mothers occur without any known preceding symptoms of lues, may be explained upon the same basis. There is no such thing as the inheritance of permanent immunity against lues. The immunity of an apparently healthy mother

of a syphilitic child indicates that she has latent syphilis, which is the true interpretation of Colles' law."

Some of the chief objections to these conclusions were brought out by Neumann as the result of years of observation. "That lues may be inherited from the father alone is proven by the often observed fact that healthy women, impregnated by their syphilitic husbands and giving birth to syphilitic children, remain well both during pregnancy as also permanently afterwards. This is further proven by some cases where such women during their pregnancy were infected by other men. This would be in distinct contrast to the assumption that such a mother is already syphilitic. Further, the fact that a woman, who from a syphilitic man had born a syphilitic child, afterward had two healthy children successively from another healthy man, and then again from the former syphilitic man a syphilitic child. Further, the fact that a mother having given birth to a syphilitic child may in the future produce healthy ones after the antisypilis treatment of the husband *alone*."

The seven years since this highly interesting debate have been filled with such a stupendous amount of scientific investigations on the etiology and serodiagnosis of syphilis that it has become almost impossible to faithfully follow the respective literature. Some problems have certainly been brought nearer their solution, none having been entirely elucidated. The fact that the syphilitic fetus shows an abundance of spirochetes is interesting in itself, but proves nothing conclusively as to their prominence. That they are so much more numerous here than in the tissues of the mother does not necessarily prove that they have first found lodgment in the fetus and then have reached the mother, but shows probably that the embryonic structures offer a better field for propagation. The fact that often the fetal portion of the placenta shows their presence while the maternal part is more or less free from them has been construed as evidence of paternal infection. *A priori*, however, it does not seem very plausible that fructification of the ovum could take place by a spermatozoon encumbered by a comparatively large organism, and if such could really happen, that development of the germs cell should proceed in the presence and under the influence of a highly virulent microbe. Those who even to-day proclaim the possibility of paternal infection, and among them is as weighty an author as Bab, believe that the spirochetes are not directly carried to the ovum by the spermatozoon but that infection takes place in the uterine cavity by the organism which is carried along with the sperma, after the ovum has been fructified. Whether we accept this theoretical explanation of the paternal influence or not, we cannot get away from hard clinical facts as mentioned before and coming from such experienced and reliable observers as Neumann, Finger, and others.

I may be permitted to add from a large number of personal experiences one case, which seems to me instructive. A man whose syphilitic career I had followed for almost sixteen years married a healthy, vigorous woman about three years after his infection, and at a period when he was free from any demonstrable symptoms of his disease. Two children were born from this union free from any conspicuous signs at birth and remaining so, but distinctly retarded in their physical and mental development, and showing, if the expression may

be allowed, a marked hereditary taint. After six years of married life the mother became infected by her own husband, who, a habitual smoker, developed from time to time numerous patches on the tongue. A full fledged generalized papular syphilide proved this to be a fresh infection. This case would show the influence of the latent syphilis of the father in the production of children that were in spite of their robust mother decidedly under par; it also shows that these children did not secure for their mother any immunity against later infection.

The so-called Wassermann test has in the last five years been put to considerable service in the study of all the problems of hereditary syphilis, and many interesting facts have been brought out as to the meaning of the laws of Colles and Profeta. The latter, which has long since been found erroneous, professed that children born apparently healthy from a syphilitic mother are immune against luetic infection.

Knöpfelmacher and Schudorf, Bab, Bauer and many others tested the validity of these so-called laws by the modern serodiagnostics methods and found them to give a positive reaction in 78 per cent. of all the apparently healthy mothers of syphilitic children examined, even several years after their birth. They concluded from this, that these mothers are not in reality immune but have latent syphilis. In a similar way, children of syphilitic mothers, born apparently healthy, give a positive Wassermann reaction. Rietschel, in a similar investigation, found the test to be positive in almost 100 per cent. of the syphilitic mothers. In children born with distinct signs of heredity lues the test gives invariably a positive reaction.

Bauer, however, found the test often unsuccessful in unborn children, due, as he believed, to certain peculiarities of the infantile serum. He also denies the validity of Profeta's law and considers such children as having latent syphilis. In regard to Colles' law he points out, that mothers of syphilitic children in apparent good health, in spite of the positive Wassermann, rarely present symptoms requiring specific treatment and hardly ever develop para-syphilitic nervous disorders.

He also tested heredity syphilis at later periods and got, as a rule, a positive reaction, just as in the tertiary syphilis. A similar observation has been made by Bering, who believes that the substances, whatever they are, which seem to cause the Wassermann reaction, persist much more tenaciously in hereditary than in acquired syphilis.

However interesting all these findings may be they do not finally solve the problem as to Colles' law; i. e., whether the mother is immune or has latent syphilis. For it still appears plausible that the syphilitic fetus may furnish the mother syphilitic antibodies, without infecting her. In regard to this purely theoretic assumption we may mention the investigations of Baisch, who found that the hemolysis-inhibiting substances do not pass through the placenta, for in some cases there may be a positive Wassermann reaction in the mother while the fetus gives a negative one, and in other cases this again reversed. Baisch considers that these peculiar substances can originate only as the result of the presence of spirochetes and that therefore the apparent immunity of the mother of a syphilitic child means a true infection with syphilis. On the subject of immunity against syphilis we may here refer, by the way, to the conclusion arrived at by

Neisser, and also by Citrou, who from animal experimentation upon monkeys, deny the possibility of immunity in syphilis and consequently have given up the hope of eventually finding an antisymphilitic serum. One is reminded in this connection of a famous saying of Fournier: "The only way to acquire immunity against syphilis is to have had the disease itself." To show the inferior rôle of the man in hereditary lues Bab mentions the following case of Porak: A woman, after having been married three years to a syphilitic man, married then a healthy man, and during the following fifteen years gets eleven syphilitic children, some of which are aborted. Also Engelman reports the case of a woman who first was married to a syphilitic man and had from him, in succession, three dead, prematurely born children. She later married a healthy man, and although remaining in apparently good health, she became pregnant and gave birth to a child with manifest symptoms of lues. The Wassermann test shows a positive reaction in both mother and child. In spite of all this the husband remains well and the Wassermann in his case remains negative.

However, to deny any and all influence of the syphilitic father directly upon the offspring seems to me to go too far. To mention only one disease in which the direct spermatie transmission to the fetus is to-day practically admitted, we may refer to leprosy. We know certain skin diseases, which are often inherited from the father alone; i. e., ichthyosis, psoriasis, dermatolysis bullosa, not to speak of the inheritance of many peculiarities both mental and physical, which are thus transmitted. In these cases the spermatozoon is the sole carrier of hereditary transmission. It does not require an unnatural stretch of imagination to believe, on general principles, in the possibility of spermatie transmission of lues. The standpoint of those who deny any paternal influence in the transmission of lues is moreover, as far as our practice is concerned, unsafe. They would insist merely upon antisymphilitic treatment of the mother. The careful practitioner, however, will equally insist upon proper treatment of the father, especially if he should give a positive Wassermann test.

When both father and mother are subjects of active syphilis at the time of conception their respective share in the transmission of the disease is not easily determined. But we know that in such cases the outlook for the offspring is of the worst. After energetic treatment of both, I have, however, in many instances seen children to be born with excellent chances for growing up.

The question of the transmission of lues by heredity to the third generation has not received a final answer. The majority of syphilographers deny such a possibility. Some, like Gaucher, believe that syphilis in the third generation is represented by a number of pathologic disorders which he tried to group together under the term of quaternary syphilis. Among them adenoids and even appendicitis. These ideas are too fanciful to merit earnest consideration.

In regard to the fate of the congenital syphilitic children I believe that their chances have much improved with better methods of treatment. I have advisedly here used the term congenital, meaning by this

children which are born alive with manifest symptoms, either at birth or soon after. Their response to proper treatment, mainly by mercurials, is very marked and I could point to dozens of them from my own practice who have grown up in a perfectly normal way, both physical and mental. Unfortunately, many fathers conceal from their physician the fact of a former infection, and thus their children are often deprived of that circumspective care and timely treatment which they may need. I remember such an instance of a man with latent syphilis, who against my advice married less than three years after his infection. A child was born a year later; the mother had a mastitis, as I learned accidentally. I was never given a chance to see the child; this would have aroused suspicion in her family. When the child was two years old the parents discovered that she was deaf. The grief of the father, who only then came to me for advice, can better be imagined than described.

As far as the question of nursing of syphilitic infants is concerned the old maxim that such children should be nursed by their own mothers has received still better foundation by recent investigations. The apparently well mother, the so-called "Colles mother" has in her milk the same antibodies as in her blood and can thus be of great service to her child in a therapeutic way. In a similar manner the apparently healthy infant of a syphilitic mother will rarely be infected by its mother and can safely be nursed by her.

In regard to the so-called late heredity syphilis opinions are divided. I personally believe that there are often cases where the first conspicuous symptoms of heredity lues, usually of the tertiary type, may occur years after birth. Others deny such a possibility and explain them as relapses of an ignored early infection.

In conclusion, I may express it as my belief that the subject of heredity syphilis will for a long time yet furnish abundant occasion for study, experimentation, observation and speculation.

PERSISTENT INFECTIONS IN SPECIFIC URETHRITIS IN RELATION TO THE PENILE URETHRA *

B. C. CORBUS, M.D.

CHICAGO

One author¹ has aptly styled the penis "the most versatile member of the human anatomy in its variations from the regular type." These variations occur irrespectively of the individual, as the small poorly developed man may be extremely well developed sexually, while his stalwart athletic brother may be just the opposite. From the double penis, as reported by Velpeau² and by Küttner,³ to the complete absence

* Read at the Sixtieth Annual Meeting of the Illinois State Medical Society, held at Danville, May 17-19, 1910.

1. Med. Rec. N. Y., 1909, lxxv, 49 and 54.

2. Journal des Connaissances Medico-Chirurgicales, xiv, 39.

3. Beitr. f. Klin. Chirurg. Bd., xv, H. 2. Cited after Carl Beck, Med News, Sept. 21, 1901.

of the organ, as reported by Harris,⁴ we may have many degrees of abnormalities which cause no harm and may go unnoticed for years unless the penis becomes affected by disease and the anomaly is then discovered by the genito-urinary surgeon.

Persistent infections in course of specific urethritis occurring in the penile urethra may be either localized in the urethra or localized in some remote part. Those that occur in the urethra are secondary to congenital malformations or secondary to localized infections (paraurethral abscess); those that occur in remote parts are due to absorption of the gonococci before the body has had time to produce sufficient antibodies to protect itself against the invading organism.

A. *Congenital malformations may be:* 1. In the prepuce. 2. In the glans penis. 3. In the shaft of the penis.

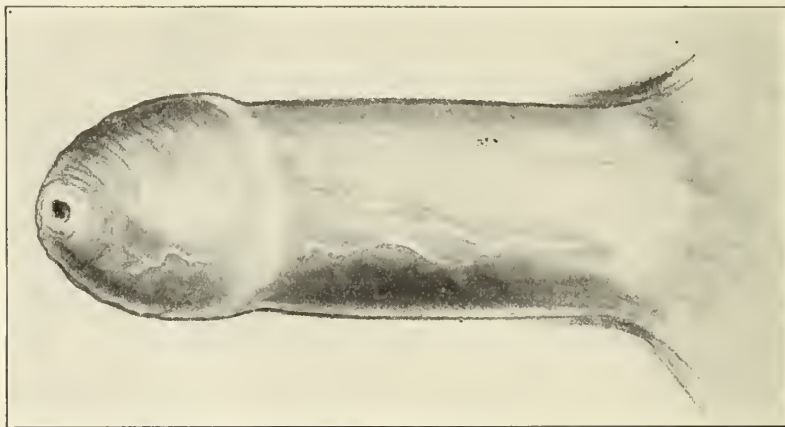


Figure 1.

Figure 1 illustrates the type of infection in which the opening in the prepuce may vary in size from that of a pin point to that of a normal aperture but unless it is a hindrance to drainage and treatment it should be left alone during the infectious disease.

I wish to report a case that had a complete phimosis with an opening in the prepuce about $\frac{1}{8}$ inch in diameter. The patient was not able to urinate or ejaculate without first filling the distended preputial sack, and then by squeezing the sack, its contents could be emptied through the small opening. This patient had contracted a specific urethritis and it was absolutely impossible to treat him without a preliminary circumcision.

In taking up the subject of congenital malformations of the glans I have considered the external urethral orifice first. Speaking from a pathologic standpoint all infections have their origin at the exterior urethral orifice, and this then is the most important part involved and as a consequence should be the first considered. The external urethral

4. Phil. Med. Jour., Jan. 8, 1898.

orifice varies from a pin point opening situated either near the superior or inferior surface of the glans to the large gaping opening of the hypospadiac, situated at the junction of the glans with the body of the penis.

The size of the external urethral orifice is extremely variable; most observers consider a meatus capable of admitting a 24 to 28 Ch. Ben. bougie to be normal; meati smaller than this, however, are very common and as far as their functions during health go are perfectly satisfactory, but as soon as the urethra becomes infected with the gonococcus we have our small opening acting as a stopper to the urethral canal. Many observers have shown the relationship between a posterior urethritis with its complications and a small external urethral orifice and it seems perfectly proper to believe that these conditions should go hand in hand and whenever there is such a congenital abnormality we are perfectly justified in making a meatotomy notwithstanding the presence of a specific urethritis.

Very often the superior and inferior commissures of the urethral orifice form a thin lamella, like an actual membrane uniting the lips of the meatus, either above or below. Among 500 genito-urinary patients in the clinic of the hospital Necker,⁵ in Paris, a meatus membranous in the lower portion was found in 140. In eighteen it was superior, and in twelve it was both superior and inferior.

By far the most important congenital malformations in respect to persistency of infections are the accessory openings of congenital canals that occur on either side of the external urethral orifice or elsewhere on the glans penis. LeFort⁶ has presented an elaborate classification of these conditions, describing in minutiae all the different congenital openings that could possibly exist, but as far as practicability is concerned the classification as outlined by Jadassohn⁷ is far more comprehensive and is as follows:

1. Preputial canals opening on the prepuce at either side of the frenulum; these may be displaced Tyson's glands or crypts, i. e., gland-like invaginations of the epidermis.

2. Minute canals opening close to the meatus, or on the mucus membrane just within the urethra; these may be abnormal or displaced openings of some of Littre's glands.

3. Canals on the under surface of the penis, near or crossing the median raphe.

4. Canals relatively large on the dorsal surface between the two corpora cavernosa; these may go from the sulcus coronarius to the symphysis.

Of the first classification: Displaced Tyson's glands are the most common; these as a rule occur on either side of the frenulum close under the median raphe and from their appearance and hardness may be mistaken for primary lesions that have not yet eroded, but careful observation will show the minute orifices plugged with a drop of pus, and by palpation their base can be felt to be continuous with the urethra: not

5. Ann. des. mal. des. org. gen.-urin., 1897, 380.

6. Ibid., 1896, 624.

7. Deutsch. Med. Wehnschr., 1890, Nos. 25 and 26, 542.

infrequently we have these glands extending into the urethra or the urethral glands suppurating and pointing externally at this site. As these conditions are quite common we should always make a careful observation of the urethra with the urethroscope before making a diagnosis.

Of the second classification: Figure 2. Minute canals that open on either side of the meatus or on the mucous membrane just within the urethra are the most frequent and persistent and least responsive to treatment of all the congenital malformations we have to deal with.

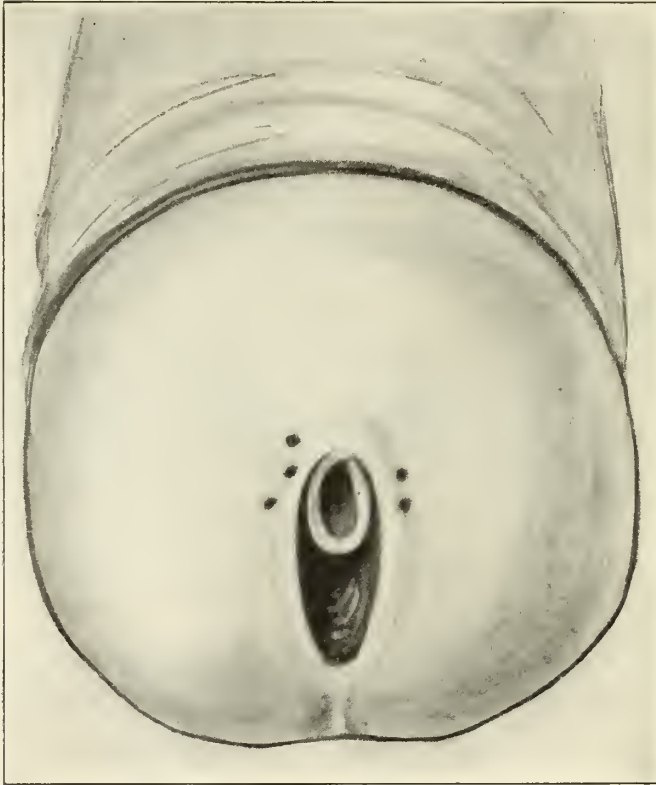


Figure 2.

Often an infected gland emptying itself just within the external urethral orifice will cause the continuance of an infection for months.

Of the third classification: Canals on the under surface of the penis near or crossing the median raphe. This form of congenital malformation is comparatively rare. Figure 3 illustrates a case of a young man aged 20 years that occurred in my practice. He had contracted a specific urethritis and presented himself for treatment on account of the peculiar situation of his infection. Besides pus exuding from the external urethral orifice, directly back and beneath the external orifice, at the junction of the frenulum with the glans penis there was an opening that

connected with a canal which extended down the median raphe and ended in a blind sack in the middle of the scrotum. This canal was lined with mucous membrane and in order to destroy our infecting organism here it was necessary to slit the canal along its entirety and to apply 10 per cent. nitrate of silver several times.

Of the fourth classification: Canals relatively large, on the dorsal surface, between the two corpora cavernosa. These may go from the

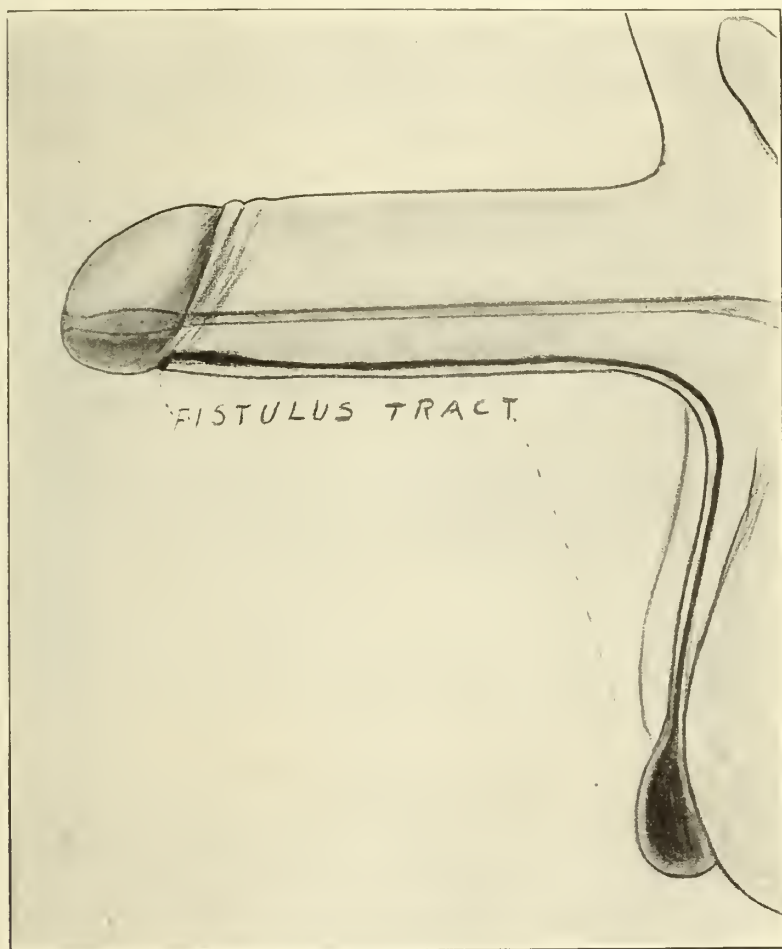


Figure 3.

sulcus coronarius to the symphysis; these are also extremely rare. Rosenthal⁸ reports the case of a student, whose urethral opening showed two equal orifices, one above the other, the lower one being the urethral one. The two canals were divided by a septum and there was a third minute opening from which secretion could be expressed.

⁸ S. Arch. f. Derm. and Syph., 1893, No. 4, 744.

Except for the blind openings that occur in the median line and anterior to a hypospadias this practically concludes the infections that occur in conjunction with congenital malformations.

There is no doubt that many different kinds of congenital canals exist but these patients do not come under medical observations until a purulent discharge manifests itself, and as a consequence are never discovered. The literature contains numerous references to these conditions but they are of sufficient rarity to be of no practical value. It is sufficient for us to bear in mind that the most persistent and intractable cases of specific urethritis are those that are complicated by congenital malformations, for here we have conditions to meet that are at times most discouraging, both for the patient and his medical advisor. The treatment here must be selected and governed by the kind of deformity existing.

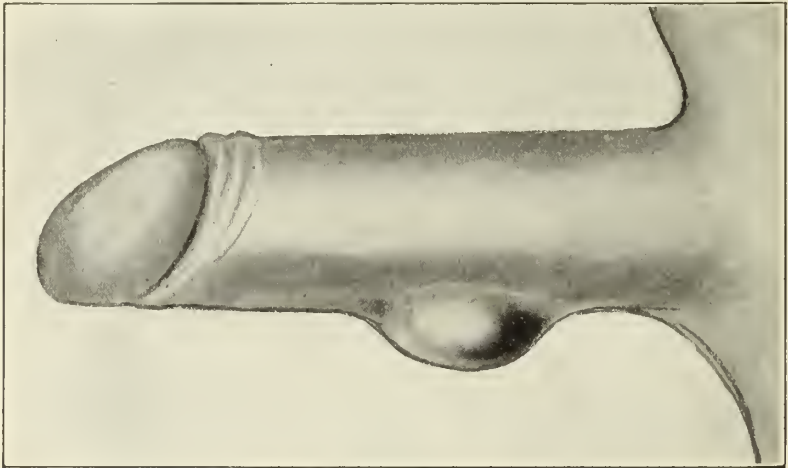


Figure 4.

When a canal is easily accessible it is possible to cure the infection by silver salts but as a rule the prolonged use of this kind of treatment has no beneficial effects, and excising the canal as a rule only adds insult to injury, as the protecting wall which has been formed is cut away and the infection is simply permitted to travel that much deeper.

Cauterization with lunar caustic or nitric acid at times destroys the mucous membrane and puts an end to the infection but the best method of disposing of these canals is with the actual cautery. This is best put into the canal cold and then rapidly heated to a cherry red.

B. *Persistent infections secondary to localized infections* (Paraurethral abscess).

R. Picker,⁹ in his investigations concerning the pathology of gonorrhea, claims that this infection is greatly aided mechanically by friction during coitus, when the gonococci are rubbed into the epithelia of the

9. Ztschr. f. Urol., 1909 1, Beiheft, 120.

open urethral os, claiming that it depends upon the impetus cocundi whether the bacteria are deposited upon the epithelial or into the deeper epithelial layers. If the germs are sufficiently virulent and numerous and the soil is virgin, the infectious disease will break out rapidly. As the glands of Littre and lacuna magna all point toward the external urethral orifice in the anterior urethra it is hard to conceive of a specific urethritis existing without some involvement of these structures taking place. The most common site of infection is the lacuna magna but it is not uncommon to find localized infections anywhere along the pendulous urethra. This is substantiated from the condition of the urethra in a chronic anterior urethritis for here with a sound in place, the floor of the urethra at times feels like a veritable washboard.

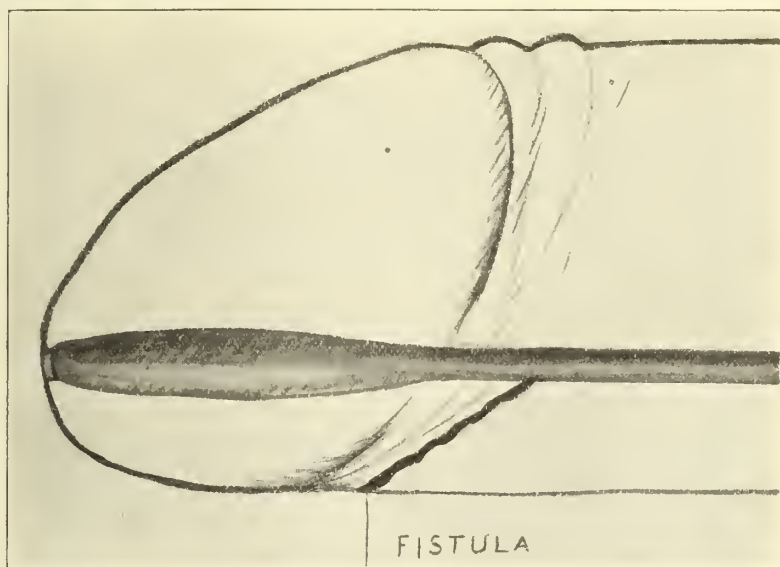


Figure 5.

The course of a paraurethral gonorrheal infection corresponds with that of the urethral infection; acute stage, swelling, secretion and tenderness followed by a chronic stage. The secretion is at first thick and creamy, later muco-purulent but containing gonococci during the whole time. Figure 4 serves to illustrate a typical paraurethral abscess occurring in the shaft of the penis. With a history of an infection and the finding of the gonococci these conditions in the anterior urethra are not difficult to diagnose. A paraurethral gonorrhea aggravates the prognosis of a urethral gonorrhea, because the urethra may be constantly reinfected from the near-by focus and even if the urethritis is healed, infection may be transmitted from the paraurethral foci and spontaneous healing is doubtful. The fistulous tracts resulting from paraurethral abscesses form some of the most persistent infections that we have to deal with in

genito-urinary practice. These cases may go on for years, the patients believing that each recurrence is a new attack.

I wish to report four cases in which the infections occurred either in the lacuna magna or in Littre's glands just back of the glans penis.

CASE 1.—Fig. 5. Mr. H., aged 36 years, gave a history of many attacks of gonorrhea, and six years ago an acute swelling just back of the glans penis; this ruptured with resulting fistula, which had continued to discharge pus containing gonococci and had reinfected the patient during all of these years. With a sound in place the fistulous tract was delicately dissected out including a small piece of the mucous membrane; the external wound being closed with pursestring suture this fistulous tract recurred so that there was a little escape of urine during urination but the infection was eradicated.

CASE 2.—Mr. B., aged 35 years. Last attack of specific urethritis seven or eight years ago, with many recurrences. Operated on the same way, only great care was taken not to injure the mucous membrane; this wound healed completely with resulting cessation of the infection.

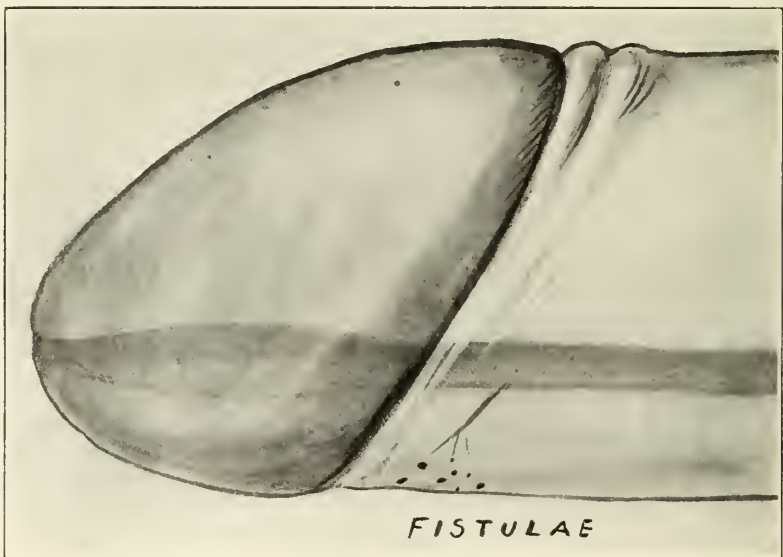


Figure 6.

CASE 3.—Mr. G., aged 36 years. Last specific infection five years ago, has had repeated attacks since. Fig. 6 illustrates the condition. The patient had a swelling first beneath the glans pointing in the sulcus coronarius on either side of the frenulum; this opened in several places, which later united and formed a single fistula which connected with the urethra. This was dissected out following the same precaution concerning the urethral mucosa; there was perfect union with a complete disappearance of the discharge.

CASE 4.—Fig. 7 serves to illustrate an infection of a young man aged 19 years that occurred in my practice with a persistent anterior urethritis for eighteen months. This was his first infection and its persistency had been a source of great annoyance. Examination showed a normal penis that had been circumcised in childhood. Just back of the glans penis to the left of the frenulum under the subcutaneous tissue of the corona and continuous with the urethra a small hard gland about the size of a pea could be felt. On hard pressure pus

exuded at the opening $\frac{1}{2}$ inch anterior at the external urethral orifice, the gland was incised, and considerable pus evacuated; later it was possible to pass a silk-worm gut suture from the external opening through the canal and out the incised opening.

An acute paraurethral abscess that occurs anywhere along the penile urethra should be incised externally when it has pointed sufficiently; operation through the urethroscope is permissible in skilled hands but here an incision too deep or too long may serve only to disseminate the infection. For the chronic infected glandular cases either massage over a sound, electrolysis or the actual cautery offer the best means of disposing of the infection.

C. Infections Localized in Some Remote Part.—If a considerable number of highly virulent gonococci are carried away in the circulation they may lead when deposited to suppuration, and if the point of reaction is

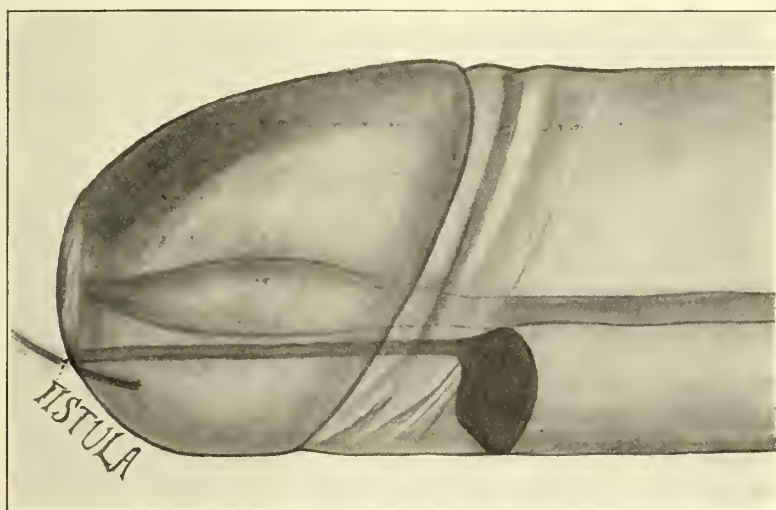


Figure 7.

in the bones an acute purulent osteomyelitis, periostitis or arthritis may develop. Picker¹⁰ cites cases in which gonorrheal infection led during the period of incubation to systemic symptoms, fever and pains in the joints. Similar cases have been reported by Ahmann,¹¹ Hausteen¹² and Scholtz.¹³

An interesting case of this kind occurred in my practice. A salesman, aged 26 years, who in the first week of a specific anterior urethritis had an acute gonorrheal infection of the tendo Achillis bursa, in which I was able to find gonococci. This case serves to illustrate the condition of a tardy antibody-formation and a virulent infection.

10. *Ibid.*

11. *Arch. f. Dermat.*, xxxix, 1897.

12. *Ibid.*, xxxviii, 1897.

13. *Ibid.*, xlix, 1899. Cited after R. Picker (ref. 9).

Systemic infection following acute anterior urethritis is more common than infection following a chronic localized focus, for in the latter the body has had sufficient time to produce numerous antibodies which protect the system, but general systemic invasion is more often associated with posterior urethritis.

TREATMENT.

For the treatment of acute anterior infections of the urethra energetic measures begun as soon as a diagnosis is made seem to offer the best prophylaxis against persistent localized infections. However, when there is an abnormality present our aim should be to destroy the infection without unduly injuring the basement membrane. Each case will offer perhaps a different phase and will have to be treated accordingly. The use of anti-gonococcus serums or vaccines for the treatment of persistent infections up to the present writing have been of comparatively little value. This seems to be borne out clinically by the reports of different clinicians, all claiming its good results in systemic infections but disclaiming any beneficial results in local conditions in the urethra.

At the present I am treating some persistent general infections of the anterior urethra with the *Bacillus bulgaris* and lactic acid bacillus. What the ultimate outcome will be I am at present not able to state, but I am satisfied that we have not as yet reached the ideal method of handling acute infections of the urethra.

With the pessimistic expressions in the journals of the lay press concerning the persistency of gonorrheal infections one would imagine that a man once infected with gonorrhea was a bacillus carrier for life, and as such a dangerous character to the community. We all know that such ideas are erroneous and that with intelligent management such infections are amenable to treatment.

CONCLUSIONS.

1. Persistent infections due to congenital abnormalities are common pathologic conditions in genito-urinary surgery.
2. Specific urethritis secondary to congenital malformations and localized infections (paraurethral abscess) form some of the most stubborn and persistent types of infections.
3. Careful examinations by means of the modern methods now at our disposal will often reveal their presence.
4. Early treatment, based upon the pathology of the condition offers the best method of eradicating the infection.

100 State Street.

DISCUSSION.

Dr. C. B. Horrell, Galesburg:—I do not rise to discuss this paper, but simply to ask a question which I hope the essayist will answer in his closing remarks. I would like to hear from the essayist as to the results that have been obtained from the use of the serum treatment in gonorrheal rheumatism.

Dr. L. B. Russel, Hoopston:—There are one or two points which, it seems to me, should be brought up in the treatment of gonorrheal urethritis. In the first place, every case should be taken and treated early, if possible. A great

many men have the habit in our town of going to the drug store first, and when the druggist has treated them for a few days or a few weeks, these cases of gonorrheal urethritis are hard to cure, but if we can get them early, I believe with Casper that one of the best agents to start with is thallein sulphate, followed with silver nitrate.

There is one point about the use of the sound which I regard of importance, namely, when the sound is used we should leave it in for some time. A great many of the books do not mention this, but it is important. I have found out that my cases get along much better when I insert the sound and leave it in for ten or fifteen minutes.

Dr. B. D. Baird, Galesburg:—I think this is too valuable a paper, and the disease occurs too frequently in our practice, to let it go without further discussion. It seems to me, if we are going to cure gonorrhea, we must begin to cure it right away, get at it early, and keep it up. I am almost constrained to say that gonorrhea, if neglected beyond a certain point, should almost be classified with the incurable diseases.

Dr. Corbus spoke of the gonorrheal patient being a carrier of bacteria. I think there is a good deal of truth in that statement. The gonococcus has been demonstrated in the urine in one of my cases seven years after the infection. Personally, I have seen a few patients die from gonorrhea, and gonorrhea is *not* simply "a bad cold." It may be considered so when a young man has not attained his majority, but those patients who contracted the disease in their early days and neglected its treatment are the men who are suffering today. The fellows that contracted the disease twenty years ago, when they were young men, are the ones who are having their prostates taken out today. This campaign against gonorrhea should be carried on very vigorously, and it does not make so much difference what line of treatment we pursue just so long as we cure the disease by getting at it early.

Dr. J. G. Fisher, Danville:—I wish to report one rather unusual case that came under my care last year. This man had had several attacks of specific urethritis, and in July he went fishing and developed a number of chills. I thought they were malarial in character and treated him for malaria, but treatment did not seem to do him any good. Quinin was of no value. Finally I examined his urine and found no albumin or anything which would point to any infection or kidney trouble, but putting it under the microscope I found a bacillus which resembled the colon bacillus. No cultural tests were made, but according to the appearance and quantity and the manner of conducting itself, it seemed to be an infection with the colon bacillus. Under urotropin the condition somewhat cleared up, but I found this bacillus over quite a period of time. Finally his urethritis cleared up, but once in a while he has a recurrent attack owing to infection of one of the glands in the free prostatic urethra; otherwise he seems to be in good health. I have not examined him for the colon bacillus recently, but I would not be surprised to find it during one of these attacks.

Dr. B. C. Corbus, Chicago (closing the discussion):—In answer to Dr. Horrell's question in regard to the value of antigonococcic serum and vaccines, the general consensus of opinion seems to be at the present time that they are valuable in systemic infections alone, not in local conditions, but notwithstanding this, if you have a localized infection in the urethra, such as an infection of the prostate, that prostate will need mechanical treatment, massage, etc.

In regard to the local treatment of a specific urethritis, I believe genito-urinary surgeons agree that treatment in these cases should be instituted early. With reference to the criticism about a patient having carried the gonococcus for seven years, I did not wish to convey the idea that these patients once infected were always infected. I said that they would be "bacillus carriers" if something was not done for them.

THE TECHNIC AND VALUE OF THE WASSERMANN TEST IN THE DIAGNOSIS AND TREATMENT OF SYPHILIS*

W. T. MEFFORD, M.D.

CHICAGO

In the short time allowed I shall not consume your time by a rehash of the history of the Wassermann test or the theory of uniting materials in the test tubes or the preparation of materials, farther than the preparing of such ingredients as required at the time of making a test. The subject is so broad and important that one can only touch upon a few points in a paper of this kind.

The Wassermann test is a seroreaction test for syphilis. In Europe the men to whom you should give the most credit for work along this line are Wassermann, Lesser, Bordet, Bruck, Citron, Ehrlich, Fleischmann, Gengou, Levaditi, Marie, Morgenroth, Neisser, Nonne, Porges and Tschernogubow, etc. In this country Butler stands pre-eminently at the head. Long, of Birmingham, Ala.; Kaplan and Sach, of New York, and Levison, of Toledo, Ohio; Matson, of Portland, Ore., and Letterer, of Nashville, Tenn. I know of no one's observations that would be so instructive as to the great value of the Wassermann test as those of Lesser. Lesser, in his post-mortem studies of viscerai syphilis, saw thirty cases of liver gumma that had not been recognized or diagnosed clinically. In twenty-two cases no clinical symptoms pointing to them had occurred. In eight cases of liver cirrhosis their syphilitic character had not been recognized. In nineteen cases gumma of the lungs often combined with tuberculosis had not been recognized. Three cases of gumma of the heart, two of suprarenals had not been diagnosed clinically. Lesser's farther post-mortem examinations show that in Berlin in about nine per cent. of all men over twenty-five years syphilis is anatomically observable. Certainly these observations are instructive enough to the clinician or general practitioner of the need of carefully eliminating syphilis as an associate or accessory in visceral and other diseases.

Butler and myself, to establish the value of the Wassermann test, made examinations of patients with all diseases usually found in Cook County Hospital, and such other diseases as we could find outside not examined in the hospital. We examined these patients in all stages and at different periods of disease and long after complete recovery. By these repeated examinations we found that in cases in which the seroreaction was positive at first examination it was still positive at our later examinations long after complete recovery from the acute disease. In most of these positive cases we got a syphilitic history. These facts show that the positive reaction was due to the previously acquired syphilis and not to the acute disease. We found it present in practically all those conditions the etiologic factor of which is now known to be syphilis, namely, general paresis, tabes, etc. In different chronic diseases, tuberculosis, etc., we occasionally got a positive Wassermann, not that tuberculosis gives the

* Read at the Sixtieth Annual Meeting of the Illinois State Medical Society, May 18, 1910.

seroreaction but that syphilis is occasionally found to be present and active at the same time. This applies to other chronic disease. Where we got a positive Wassermann we most generally in these diseases got a typhoid history. We got a positive seroreaction in all stages of known active syphilis, such as primary lesions, when first observed, secondary, tertiary, para-syphilitic and inherited.

The materials necessary for the Wassermann test, are luetic liver extract, amboceptor or sheep immunized rabbit serum, guinea-pig serum or complement, washed sheep corpuscles, specific and normal serum and sera to be tested. The materials for this test are now prepared and standardized, full instructions going with them how to mix and read results. Mixing of materials is an easy matter, any one being able to do this. The preparation of material, however, is not a complicated affair. The literature on mixing material usually gives measurements in c.c. or parts of c.c.

I think the drop method most convenient and sufficiently correct. I believe that an audience of this kind will get more information about the test, to describe by drops. To mix material I use one-half inch by four-inch test tubes. It is best for beginners to prepare a chart.

CHART FOR MIXING MATERIALS IN WASSERMANN SEROREACTION TEST

Names of persons whose sera are to be tested and controls.	Number of tubes.	10 drops physiologic salt solution.	One drop luetic liver extract.	One drop serum.	One drop of complement.	Incubate Thirty Minutes	One drop amboceptor.	One drop washed sheep corpuscles.	Note results
Serum to be tested goes in Tubes 1 and 2.....	1	1	1	1	1		1	1	.....
Known positive or specific serum goes in Tubes 3 and 4.	2	1	0	1	1		1	1	.....
Known normal or negative serum goes in Tubes 5 and 6.	3	1	1	1	1		1	1	.....
Control on all tubes.....	4	1	0	1	1		1	1	.....
Control on complement in amboceptor	5	1	1	1	1		1	1	.....
	6	1	0	1	1		1	1	.....
	7	1	0	0	1		1	1	.....
	8	1	0	0	0		1	1	.....

TO SET UP TEST

First, number tubes. Second, put in 10 drops physiologic salt solution, using an ordinary dropper. Third, one drop luetic liver extract. Fourth, one drop of serum in such tubes as indicated under names at left of chart. Fifth, add one drop of complement or guinea-pig serum. Incubate 30 minutes. Sixth, add one drop of amboceptor. Seventh, add one drop washed sheep corpuscles, either two parts of corpuscles and three parts physiologic salt solution or one part corpuscles and one part physiologic salt solution. Again return to incubator for ten to thirty minutes; usually test has worked in this time. Shake tubes as materials are added.

Materials at head of column go in such tubes as marked (1) in chart. Materials at head of column do not go in such tubes as marked (0) in chart.

Use small pipet for all materials except salt solution.

If other sera are to be tested or you wish other controls or to control other material add as many tubes as required.

First, number tubes 1, 2, 3, etc., until all tubes are numbered so no error can be made in changing tubes. Second, add ten drops physiologic salt solution to all tubes, using an ordinary dropper. Third, add from a small pipet one drop of luetic liver extract to such tubes as indicated in

chart, or 1, 3 and 5. Fourth, add one drop of the following sera to such tubes as are designated in chart: Serum to be tested in 1 and 2, specific or positive serum in 3 and 4, normal or negative serum in 5 and 6. Fifth, add one drop guinea-pig serum or complement to tubes from 1 to 7. Now put in incubator or water bath for twenty or thirty minutes at a temperature of 37 degrees centigrade or 98.4 Fahrenheit. Sixth, after incubation add one drop proper diluted amboceptor to such tubes as designated in chart. Seventh, add one drop diluted washed sheep corpuscles, two parts corpuscles, and three parts physiologic salt solution to all tubes. Mix all materials as they are added by shaking tubes to be sure no materials adhere to side of tubes and evaporate. After adding sheep's blood and shaking return to incubator or water bath. Watch closely for from ten to thirty minutes and as a rule you are able to note findings or read results. Your test having worked correctly and your suspected serum being a strong positive, in tube 1 there will be no hemolysis, the appearance being the same as in tubes 3 and 8; 3 is your positive or specific control and 8 is your control on complement; each tube 1, 3 and 8 will look as when blood was first added. If, however, the serum tested is negative you will have complete hemolysis in tube 1, the appearance being the same as in tubes 5 and 7. Tube 5 is your negative or normal control and tube 7 your control on all tubes in test up to 7: 1, 2, 4, 5, 6 and 7 will look the same and show a complete hemolysis. If, however, after repeated test there should be a partial hemolysis of serum tested you estimate the degree of activity as a weak or faint positive. In a faint or weak positive you are hardly justified in diagnosing active syphilis, yet if after several examinations at different periods of a few weeks you still get weak or faint positive reaction you may recommend the patient for specific treatment. First, administer potassium iodid and after a few weeks treatment with the iodid re-examine the blood, for I have observed in some cases that after the administration of iodid I have got a strong positive, where previous to the administration of iodid I got a strong negative. The iodid seemingly stirs up those products in the system which cause a positive reaction. Others in Europe have made the same observations. If, however, after administering the iodid and testing the blood again you get no change in your reaction I would recommend the administration of mercury. After administering mercury a sufficient length of time re-examine the blood. If now you get a complete hemolysis you can safely conclude that the weak or faint reaction previously obtained was due to syphilis. This positive reaction sometimes found after the administration of iodid would suggest two things: The propriety of combining mercury with the iodid and of the surgical removal of gummata and other lesions when possible.

Dr. O. S. Ormsby informs me, if I quote him correctly, that he has got a positive seroreaction from the serum taken directly from an ulcer when he did not get a positive seroreaction from the blood taken elsewhere from the patient, but after the administration of iodid he got a positive seroreaction from the blood, his observations corresponding somewhat with mine.

To take blood it is best to use a blood taker or a hypodermic syringe. First sponge skin over vein with alcohol. Tie constriction above elbow to distend vein. Insert the needle in the vein at the elbow, make gentle suction on blood taker or slowly withdraw piston of the syringe. With blood taker I usually take 10 to 15 c.c. With hypodermic I take 2 to 5 c.c. Immediately after taking the blood put it into test tube and lay it on side, leave it here for five or six hours at room temperature until the serum separates, then pipet or pour off serum. Or if you wish you can centrifuge off serum from the blood as soon as taken. You can take blood from a needle prick in the thumb or finger in Wright's capsule, or any small container. To take off serum from capsule scratch the glass capsule with file and break off the small end when you can pipet off serum. I much prefer the blood taker or syringe to take blood. After serum is taken off it should be heated in water bath to 55 to 60 degrees centigrade for thirty minutes to inactivate or kill the complement. This not only destroys the complement but will improve the working of the serum in the test. If it is a serum that you wish to keep for control it should be kept in an ice box, but do not freeze. Label all materials.

In my observations in all primary external manifestations of syphilis I got a positive Wassermann and in the treatment of these cases I saw with a disappearance of these manifestations also a weakening of seroreaction to a complete hemolysis of test, or with a disappearance of all external manifestations the Wassermann test became negative. This is true of late manifestations as well. In some very rare cases late syphilitics that do not respond to any kind of treatment continue to give a positive Wassermann. I have seen clinical manifestations return soon after vigorous treatment, with return also of a positive Wassermann and under treatment have seen the clinical manifestations again disappear as well as a positive Wassermann return to a negative Wassermann. My numerous and repeated examinations extended over a period from 1907 to the present time. Many others report the same experience or findings, clearly indicating to my mind the value of the Wassermann test in the diagnosis of active syphilis. A positive seroreaction is an indication of active syphilis somewhere in the individual, whether it be in some remote part that would give no clinical manifestations, or beginning of syphilitic invasion of more vital structures, as the nervous and arterial system, visceral organs, etc., and therefore an indication for active specific treatment.

The least important manifestations in the life of a syphilitic are those that appear externally, in the skin, mucosa, etc. These alone would be an indication for treatment. It is the unseen syphilis giving no clinical manifestation which should be regarded as of the most vital importance to both the patient and physician. No one would care to await the clinical disastrous manifestations of invasion of the more vital structures as the arterial and nervous systems, liver, lungs, etc., or the recurrence in a specific meningitis when we have in the seroreaction test the means whereby we can detect an active syphilis and possibly ward off such disaster. No syphilographer or physician of to-day can say to a syphilitic

that he is cured. He can say, however, that his syphilis is not active, governing his prognosis by seroreaction test. No man is competent to treat a syphilis who does not make use of the test tube and microscope or laboratory. That syphilis is more virulent in some than in others or that some respond to treatment more readily than others makes frequent blood examinations all the more necessary. These examinations should begin with the first year of leaving off treatment and be repeated every one, two, or three years and perhaps longer, until you are assured of the virulence of the disease or the success of treatment. The treatment should be kept up a few months each year for at least the first few years even in those that respond well to treatment, governing the result of treatment, as stated above, by blood examinations. As no syphilitic can be assured that his disease will not again become active, he must be kept constantly during life under the observation of his physician and treatment every few years at farthest with blood examinations. By these observations of syphilitics many of the late forms of syphilis and possibly inherited syphilis to a great extent at least would be eliminated.

In pregnancy of a suspected syphilitic both the father's and mother's blood should be examined and if either is found positive the mother should be put upon specific treatment whether she shows a positive "Wassermann" or not. The mother's blood should be examined every two or three months during her pregnancy. No child should be permitted to nurse a mother who has shown a positive "Wassermann" at any time. A mother's milk of an active syphilitic will show positive to the test as well as her serum. Before employing wet nurses both their milk and blood, as well as the child's blood, which she is to nurse, should be subjected to a Wassermann test. This is done to protect the nurse from the syphilitic child. A child born of syphilitic parents should have its blood examined from time to time and not be put on treatment until it shows an active syphilis. By "Wassermann test" in a few years the value of Colles' and Profeta's laws should be more satisfactory established.

All syphilitics should be required to be reported by attending physicians to the health department, whether acquired or congenital. If a crusade was made against syphilis as against tuberculosis, syphilis in a few generations would be exterminated. The question of marriage of syphilitics should be more closely guarded than at the present time. If syphilis was made a compulsory reportable disease, parents would see to it that men whom their daughters were to marry had a clean health record, and vice versa. Not only would reporting syphilis benefit the moral problem but also the economic problem as well. A great saving to the state, county and city would be made if syphilis were eliminated. It is astonishing to see in large institutions the number of incurable late syphilitics, to say nothing of those put out of employment or earning capacity outside of these institutions. These subjects, unlike tuberculous subjects, may live ten, twenty, or thirty years, or perhaps even longer, wards of public charity; while tuberculous subjects usually die in from one to three years or improve and return to employment or earning capacity. Again tuber-

culous subjects do not breed degeneracy while syphilitics do. An active crusade should be instituted against syphilis for the health and the moral, economic and intellectual uplifting of mankind.

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DISCUSSION

Dr. F. G. Harris, Chicago:—This test is of immense significance—in fact it is wonderful that it has not been fully appreciated heretofore in America. It is comparatively new here, while in Europe it is accepted without any reservation whatever. There are certain things we must consider about it. First, what is the test? It is a biologic test like the Widal reaction. It is, however, much more specific than the Widal reaction. A positive Wassermann reaction means syphilis, without any reservations whatsoever in this latitude. In the tropics there are some reservations. Like all other biologic tests a negative reaction has not the same weight as a positive. In judging the value or significance of a negative reaction we must consider the clinical history of the case. With a case that has had no treatment for syphilis, but in which the technic is absolutely above suspicion, a negative reaction has a good deal of weight.

The great hindrance to a proper appreciation of the significance of the Wassermann test has been the technic. The technic is difficult and all the attempts that have been made to simplify it, have only served to cause confusion, and have brought the Wassermann test in this country somewhat into disrepute. The technic is not as simple as Dr. Mefford would have you believe. The technic of mixing the solutions and seeing whether one hemolyzes or one does not is simple, but when we get a tube in which hemolysis is shown, it may be a negative case, whereas if another person with a less careful technic makes the test it may show positive. I am very much opposed to the drop method of doing a Wassermann. We know that this is a quantitative reaction, and when we are working with drops we are working with unknown quantities. We must know the value of certain factors in connection with this work. We have got to work with liver antigen which is known to act only with syphilitic sera. We must know that the syphilitic extract will not cause hemolysis or prevent it. We must also prove that the patient's serum alone will not bind complement and thus simulate a positive reaction. In fact there are so many treacherous details in the technic, that only one who has had a large experience with the test can have a proper conception of the difficulties encountered.

Dr. B. C. Corbus, Chicago:—I have been working with the Wassermann reaction two years. I began with the original Wassermann technic and have adhered to it throughout the whole time. With a good liver extract, a good hemolytic system, with plenty of known normal and luetic sera, the technic is not difficult to master. The Wassermann test is most valuable to the syphilographer, not only as an aid in diagnosis, but also in the treatment of syphilis.

From the thousands of cases that have been reported, its value as a diagnostic aid has been well substantiated; as far as its value in the treatment of syphilis is concerned, time alone will tell, as the test is far too recent to form any definite conclusions. At present we should be satisfied in making a diagnosis, first, by finding the spirochete in the primary lesion, or second, by the serum reaction of Wassermann.

Begin treatment at once, our aim being to get a negative Wassermann as soon as possible and to keep it negative throughout the whole time. We all know that with the cessation of treatment, a negative Wassermann will become positive; consequently, it behooves us, during the first years of the infection, to give continuous energetic treatment if we wish to obtain success later on.

Dr. Robert H. Babcock, Chicago:—The value and necessity of the Wassermann test in ordinary practice have been amply borne out by my experience with it this winter. Of a number of cases thus treated, one was combined pulmonary tuberculosis with aortic insufficiency. As this man had attacks of hemoptysis, and suspecting there might be a syphilitic basis, I had the test made and the

reaction was positive. He was put upon mercury, and his physician reported within three weeks marked improvement and cessation of the hemoptysis. Another man, a negro, who had been in the Cook County Hospital, with aortic insufficiency and presented all the signs of aortic insufficiency with mitral incompetence, gave a positive reaction. This was two months ago. He has not been given one drop of medicine save mercury and today all signs of aortic insufficiency have disappeared. Hypertrophy of the heart remains. The aortic second tone is loud and clear. There is no diastolic murmur, and the man has lost all of his cardiac symptoms. A third case, a man with aortic aneurysm, who persistently denied infection, gave a positive reaction. He was put upon mercury, and the change in his condition was simply astonishing to him and myself. The first symptom to disappear was pain, and the aneurysm itself is showing unmistakable evidences of retraction. I believe in every case of aortic aneurysm the Wassermann test should be made, and, if positive, the patient should be put upon mercury.

THE VALUE OF THE WASSERMANN REACTION IN NERVOUS AND CARDIO-VASCULAR DISEASES *

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There is probably no subject in medicine that has made such marked advances within the last few years as has the subject of syphilis. Metschnikoff and Roux's¹ discovery of the susceptibility of monkeys to syphilis, while not absolutely new, was of sufficient moment to stimulate study of the disease.

Schaudinn's² discovery of the *spirochaeta pallida*, as the etiologic factor of syphilis, was the means of putting the pathology of syphilis on a rational basis. A direct outcome of Schaudinn's work was the discovery by Wassermann, Neisser and Bruck³ of the method of serum diagnosis. The great value of the Wassermann reaction can hardly be estimated. It has already caused us to change many of our ideas of various phases of syphilis, and there is no branch of medicine or surgery, that will not feel the influence of this discovery.

It has long been recognized that persons giving a history of syphilis were subject to various diseases, the so-called parasyphilids, the exact pathogenesis of which was not known but might best be expressed as the result of toxic effects. We now know that syphilis is a chronic infectious disease, a septicemia due to the *spirochaeta pallida* and that each and every focus of syphilitic inflammation is due to the presence and growth of the *spirochaeta pallida*.

We know that the body reacts to this spirochetel infection in two ways: 1. By the production of a peculiar circumscribed area of inflammation, known since Virchow's time as a gumma. This has long been

* Read at the Fifty-ninth Annual Meeting of the Illinois State Medical Society at Quincy, May, 1910.

1. *Ann. de l'Inst. Pasteur*, xvii.

2. *Arch. a. d. k. Gsndhtsamte*, 1905, Bd. 22, Heft 2.

3. *Deutsch. med. Wehnschr.*, 1906, Bd. 32, No. 19, p. 745.

recognized pathologically and often clinically. 2. The production of diffuse interstitial inflammation is of much greater importance, not alone because of its greater frequency, but because it is seldom diagnosticated early. There is no doubt that the chronic connective tissue hyperplasia, characteristic of various diseases, and affecting different organs, is of this kind. Before the discovery of the spirochete this type was indistinguishable from inflammatory processes due to other causes. It is now known that inflammatory conditions of this type may be diagnosed pathologically, by the demonstration of the spirochete, and clinically, by means of the Wassermann reaction.

While syphilis is a spirochetal septicemia and we now know that no organ or tissue of the body is immune to infection, there are certain tissues, however, which seem to be points of predilection for the location of the spirochete, notably the nervous and circulatory systems.

We are all familiar with Krafft-Ebing's fruitless attempts to inoculate cases of parietic dementia with syphilitic virus. It is well recognized that syphilis plays a large rôle in the etiology of tabes and paresis, but just what that rôle is, is still a disputed point. On the one hand are those who think that a syphilitic infection acquired from five to thirty years previously caused some sort of impairment in the nerve tissue which as a result degenerates. On the other hand, are the adherents of the newer pathology of syphilis who claim that cases of tabes and paresis are still syphilitic and that the nervous disturbance is due to an active syphilis some place in the body. In paresis the syphilitic process is located in the nervous system and in tabes, probably there. This latter view is based principally on the results of the Wassermann reaction.

It might be well here to give briefly the results obtained in known syphilitic conditions.

Boas⁴ reports on 864 cases of syphilis as follows:

- Primary syphilis, 60 per cent. positive.
- Secondary syphilis, 100 per cent. positive.
- Tertiary syphilis, 97 per cent. positive.
- Latent syphilis, 47 per cent. positive.

Four hundred and eighty-five cases with no history or signs of syphilis were negative.

Blaschko's⁵ results on 300 cases of syphilis are as follows:

- Primary syphilis, 90 per cent. positive.
- Secondary syphilis with symptoms, 98 per cent.; 50 per cent. changed from positive to negative under treatment.
- Secondary syphilis without symptoms, 80 per cent.
- Tertiary syphilis with symptoms, 91 per cent. positive.
- Tertiary syphilis without symptoms, 57 per cent. positive.

The above statistics show us that in spite of the usual treatment 80 per cent. of the cases during the first four years are still syphilitic and that in the tertiary stage, that is, from the fourth year on, 47 to 57 per cent. are still syphilitic.

With the exception of sleeping sickness, frambesia tropica, dourine and some cases of tubercular leprosy, no other diseases give the reaction.

4. Berl. klin. Wehnschr., 1909, Bd. 46, No. 13, p. 588.

5. Berl. klin. Wehnschr., 1908, Bd. 45, No. 14, p. 694.

At the present time the consensus of opinion is that with the exception of the above mentioned diseases a positive Wassermann reaction shows the presence of active syphilis somewhere in the body.

We have examined the blood in thirty-eight cases of tabes and obtained a positive reaction in thirty-one. From the literature we have been able to collect statistics on 280 cases of tabes, of which 72.6 per cent. showed a positive reaction in the blood or spinal fluid. In paresis the figures are even more startling; 1,188 cases from the literature showed 96.5 per cent. positive, and practically all of the recent reports show 100 per cent. positive. It seems to make no difference how old the disease is, early incomplete cases show the reaction as well as cases that are far advanced and furthermore the length of time since the syphilitic infection does not seem to influence the result of the test. All cases of paresis show a positive reaction in the blood or spinal fluid.

In sixty-two paretics, all showing a positive reaction, reported by Plaut, the time since the infection with syphilis was six to twenty-one years and the duration of the paresis varied from three weeks to six years.

Edel⁶ says that the reaction is useful to differentiate paresis from diseases simulating it. Marie⁷ believes that a positive reaction in the spinal fluid allows of the diagnosis of early paretic symptoms, which otherwise might be thought to be neurasthenic. From his observations Edel believes that a negative reaction excludes paresis. What has been said of tabes and paresis applies also to other syphilitic diseases of the nervous system and as Erb has said, there is no disease of the nervous system but what may have a syphilitic basis.

Berger and Rosenbach,⁸ in 1879, first called attention to the coincidence of tabes and cardio-vascular disease. This association soon became well recognized and there were various more or less fantastical theories offered to explain the association. Grasset thought that the cardiac disease was due to the tabetic pains. Von Leyden, in 1885, thought the association was purely accidental.

Strümpell,⁹ in 1907, again called attention to the prevalence of cardiac disease in tabes. He reported sixteen cases of this combination and was able to show that 62 per cent. of these cases certainly or very probably had had syphilis. Rogge and Müller,¹⁰ in twenty-two cases of tabes entering Strümpell's clinic found eight with evidence of cardiac involvement.

In the light of the newer researches on syphilis this association of tabes and circulatory disease becomes more significant and the question naturally arises, is syphilitic involvement of the circulatory system always a late effect? May it not also be present in early syphilis?

Ricord, in 1845, was the first to describe syphilis of the heart, showing a case of gumma of the left ventricle. This, to be sure, is a rare occurrence for Stockmann,¹¹ up to 1904, was only able to collect eighty cases.

6. Allgem. Zeitschr. f. Psych., 1909, Bd. 66, No. 1, p. 217.

7. Vide-Wassermann Deutsch. Zeitschr.f. Nervenheilkunde, Bd. 36, Heft 1-2, p. 73.

8. Berl. klin. Wehnschr., 1879, No. 27, p. 402.

9. Deutsch. med. Wehnschr., 1907, Bd. 33, No. 47, p. 1931.

10. Deutsch. Arch. f. klin. Med., 1907, Bd. 89, Nos. 5-6, p. 514.

11. Quoted by Bruhns.

However, there is no doubt but that it is very much more common, which is accounted for by the impossibility of diagnosing the condition clinically, and a scar of a healed gumma has nothing characteristic by which the syphilitic nature of the previous process can be determined.

Mracek,¹² in an extensive study of the pathologic changes in hearts of congenital syphilitic infants, found extensive interstitial changes in a number of cases. Bruhns,¹³ in six of nine cases of congenital syphilis, found similar changes in the myocardium. The same pathologic conditions probably occurring in children and young adults are due to an interstitial inflammation of syphilitic origin.

Fournier¹⁴ and Mracek¹⁵ have called attention to the presence of cardiac symptoms during secondary syphilis. Grassmann,¹⁶ in a large series of cases of early syphilis found evidence of cardiac involvement in two-thirds. Undoubtedly some of these disturbances were functional, but one must admit the possibility of many of them being organic, the syphilitic inflammation later subsiding under the antisyphilitic treatment.

There is probably no part of the heart that may not be affected by the disease. From our study of the literature it would seem that the pericardium is least often involved. Engle-Reimer¹⁷ and Foerster¹⁸ have reported cases of pericarditis in early syphilis.

Endocarditis of syphilitic origin is certainly very much more common than has hitherto been suspected. When one thinks of the cases of valvular disease in which there is no history of previous infections such as ordinarily cause endocarditis, one must admit that there are a goodly number of cases that might be syphilitic. The difficulty has been to determine the syphilitic nature of the process.

We are all aware of the unreliability of the patients' statements. Heretofore we have been compelled to base our opinion on the presence or absence of signs of syphilis. This is of little more value than the patients' statements. Palmer¹⁹ examined 600 women who were known to have had primary or secondary syphilis several months previously, and could find no signs of the disease in any of them. The only means by which we can diagnose these conditions is the Wassermann reaction.

A case in point is the following: A man aged 34 years, a teamster by occupation, entered the Cook County Hospital, October 24, 1908, with all the evidence of cardiac disease in the stage of broken compensation. The history was negative, except for a syphilitic infection four years previous. Three years after his infection, he began to complain of shortness of breath on exertion and edema of the ankles. It was a question whether the syphilis was the cause. A Wassermann test was strongly positive. Two months later the case came to autopsy and showed a very marked stenosis and regurgitation of both the mitral and aortic

12. Vidi-Von Renvers V. *Int. Cong. f. Dermatology*, 1904, Bd. 11, p. 215.

13. *Berl. klin. Wehnschr.*, 1906, Bd. 43, No. 8, p. 217.

14. *Lecons sur la Syphilis-Paris*, 1881.

15. Vidi-v. Renvers v. *Int. Cong.*

16. *Munch. med. Wehnschr.*, 1907, xliv, Nos. 18-19, *Arch. f. klin. Med.*, 1901.

Nos. 68-69, p. 445.

17. Vidi-v. Renvers, *Loc. Cit.*

18. *Ibid.*

19. *Deutsch. med. Wehnschr.*, 1895, Bd. 21, No. 5, p. 76.

valves. The valvular changes presented nothing by which the syphilitic nature of the process could be determined. The aorta, however, showed a very marked syphilitic aortitis. We have had two other similar cases since, both giving a positive Wassermann reaction. Schütze²⁰ reports six cases of aortic valve disease all showing a positive reaction.

The valve most commonly affected is the aortic. It has long been known that a large majority of the cases of aortic valvular disease gave a history of syphilis, but that the changes are due to a syphilitic inflammation of those valves is a new conception of the disease, and yet the results of the Wassermann reaction show such to be the case and the spirochæta pallida have been found in these valves. This pathogenesis of aortic disease best accounts for the progressive character of the affection; and indicates an etiologic treatment that promises much, if instituted early.

Probably the aorta is the part of the circulatory system most frequently affected by syphilis. Doehle,²¹ in 1845, first called attention to the fact that there was a typical form of sclerosis of the aorta, which was of syphilitic origin and should be sharply differentiated from the ordinary forms of arterio-sclerosis and atheroma. Heller²² later made an exhaustive study of the condition, and the disease bears his name. Chiari²³ found Heller's aortitis present in one-half of all autopsies on known syphilitics and in 47 per cent. of cases of paresis.

It is only since the discovery of the spirochete that the condition could be shown to be a syphilitic aortitis due to the spirochæta pallida. Schmorl²⁴ and others have found them in large numbers in Heller's type of aortitis. Wright²⁵ has found the spirochete in about 50 per cent. of the cases of suspected syphilitic aortitis. This is an important addition to our knowledge, for there is no doubt that we shall eventually be able to recognize syphilitic aortitis as a distinct clinical entity, and we will then be in a position to institute proper treatment early and thus prevent more serious changes. We shall not discuss the clinical symptoms of this condition, but merely say that the syphilitic etiology is shown by the fact that these cases all give a positive Wassermann test. Frankel and Much,²⁶ in eighteen cases of aortitis at post-mortem, found thirteen gave a positive Wassermann. In the five negative cases they thought the syphilis was cured. Schütze²⁷ reports two cases of aortitis and one of coronary sclerosis which were positive during life.

The necessity for an early diagnosis of this condition is apparent when we realize that it is the preliminary stage in the formation of aneurysms. Etienne,²⁸ in 240 aneurysms, found positive evidence of syphilis in 69 per cent. Düring²⁹ says that between 56 and 85 per cent. of all aneurysms show signs of syphilis and that the great majority of all

20. Deutsch. Zeitschr. f. Chirurg., 1908, Bd. 95, Nos. 1-5, p. 13.

21. Dissert., Kiel, 1885.

22. Verhandl. d. II. pathol. Gesellsch. München, 1899.

23. Vidi-Bruhns, Berl. klin. Wchnschr., 1906, Bd. 43, No. 17, p. 513.

24. Höffmann's Atlas, Plate XX, Fig. 4.

25. Jour. A. M. A., 1909, Vol. III, No. 18, p. 1454.

26. Münch. med. Wchnschr., 1908, Bd. 55, No. 48, p. 2479.

27. Loc. cit.

28. Ann. de Derm., 1897, VIII, No. 1, p. 1.

29. V. Int. Cong. f. Dermatology, 1904, Bd. 2, p. 194.

aneurysms in persons under 50 years are due to syphilis. With these figures in mind one naturally wonders what the Wassermann reaction shows in these cases. We have examined one innominate, and twenty-five aortic aneurysms in patients varying in age from 33 to 55 years. Of these patients twenty-three gave a positive Wassermann reaction.

These results place the subject of aneurysms in a new light and we shall have to consider the vast majority of them, especially in persons under 50 years, as being manifestations of an active syphilitic process in the aorta itself, and these cases are just as syphilitic and require anti-syphilitic treatment just as much as if the syphilitic process was located on the skin and visible.

This is also true of a large number of cases of aortic valve disease and of a much smaller number of cases of mitral disease. An active syphilitic process in the heart or arteries requires antisiphilitic treatment as much as a syphilitic process on the skin or any other part of the body. In the nervous and cardio-vascular cases that we have had an opportunity to treat and control the treatment by repeated Wassermann tests, we have been able to obtain a negative reaction in all, although these cases require more energetic and prolonged treatment than do cases of early syphilis. Judging by the results obtained in the comparatively small number of these cases, we believe that this "so-called" biologic method of treatment is indicated, and will be followed by as satisfactory results in this class of cases as in cases of early syphilis.

All authors mention the marked value of the iodids in aneurysm and aortic disease, and it is very probable that it is in just these syphilitic cases that the good effects are seen. We know now, however, that the iodids have practically no effect in removing the cause of syphilis, and that mercurials are of far more value. Of course it is not to be expected that any destruction that has taken place will be replaced, but the progression which is so characteristic in these conditions may be prevented.

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THE RELATIONS AND CLINICAL SIGNIFICANCE OF THE URINARY ACIDITY *

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One is tempted to believe from a study of the literature on this particular subject that it is of little or no significance. In fact very little space is devoted in most text-books to the discussion of the importance of the urinary acidity. One learns that the reaction of the urine is normally acid, that at certain times of the day it may be amphoteric or even alkaline and that an alkaline urine is in all probability an

* Read at the Sixtieth Annual Meeting of the Illinois State Medical Society, at Danville, May, 19, 1910.

evidence of cystitis or retention. The litmus-paper test is referred to, the burette method of estimating this factor is mentioned and, generally speaking, the whole subject is passed by very superficially. In addition to this current medical literature has until the last year evidenced a decided paucity of discussion along this line. It is encouraging to notice that as medicine progresses a greater interest is being manifested in the so-called "minor matters" and the study of the urinary acidity and its relations will soon be considered in its proper light.

The information obtained by the careful estimation of the urinary acidity is of very great clinical import. In my estimation it is one of the most important of the urinary findings and a factor which should be known as a matter of course in the routine examination of every case; for the conditions associated with a decreased blood alkalinity have been found time and again associated with several other definite findings, and it has been shown by laboratory experiment, as well as by clinical experience, that therapeutics based on this particular finding have given most salutary results.

The reason that the condition of high urinary acidity and the usual associated clinical and laboratory findings have not been more frequently found and described together is that they have been so seldom looked for. The determination of the reaction of the urine by the obsolete litmus method is as far as most physicians care to go in their urinalyses. The degree of acidity is estimated in the larger clinical laboratories, but it is the exception rather than the rule to find the average physician taking the time or trouble to make this simple test. "What good is it anyway?" they say. "If I can see a specimen of urine and make a test for albumin and sugar, and find out the specific gravity, I'm satisfied."

This is an unfortunate state of affairs, for the acid-index is a factor of considerably more than ordinary importance, has a direct and close relation to metabolism and elimination, and is, therefore, a guide of no mean value to the physician who is endeavoring to care for indefinite and obscure ailments.

The estimation of the urinary acidity is not a difficult procedure. It can be very simply and quickly estimated in the laboratory with a burette, or anywhere with an acidimeter and no other reagents than deci-normal soda solution and a phenolphthalein indicator solution. Some writers have said that this test is far from accurate and for this reason have depreciated it. There is not a doubt of the futility of endeavoring to accurately estimate the total acidity by the above method; but in clinical laboratory work we do not expect a grade of volumetric or gravimetric work which can be compared, say, to the work of the assayer or metallurgist. In medicine we are satisfied with approximate figures. To prove this I merely mention the notoriously inaccurate methods in general use for the estimation of albumin, urea and, for that matter, practically every quantitative urinary test save alone the estimation of nitrogen.

The fact that the actual total acidity of the urine is a factor which is practically impossible to obtain with any absolute degree of accuracy does not deter the practical physician from making the test. Let us give here an illustration. A specimen is examined and the acidity is deter-

mined to be 40 degrees. The amount passed is one liter. The reaction to litmus is, of course, acid. A second specimen is examined and the acidity found to be 120 degrees with an amount approximating 1,500 c.c. The litmus test is also acid. Is there any material difference between the condition of the alkalinity of the blood in these two cases? Assuredly. In the first case the number of acid units is 40,000 (practically the average normal figure) and in the second, 180,000, or a good deal more than four times the normal. Surely there is an evident difference here.

Personally I have encountered no little skepticism regarding the real clinical importance of the matter under discussion here. I presume that this is only natural. Too often we are prone to overlook the more common things simply because we do not realize their significance. The "theory of autointoxication" first taught by Bonchard has within twenty years become one of the most important and widely-recognized factors in the pathogeny of all disease, and yet the eminent internist and investigator, von Noorden, himself, admits that: "At first we German physicians were by no means inclined to accept the theory of autointoxication that was being so enthusiastically proclaimed. Of late years, however, our attitude has become more friendly to the doctrine. This change of front is due to the fact that a number of the toxic products of metabolism have actually been isolated and their mode of origin in the organism, and their pathologic effect determined to the satisfaction of the former critics."

If I am not greatly in error the clinical significance of the urinary acidity will be in the years to come one of the essential diagnostic factors. It will be estimated in every case and, to a certain extent, upon its variations will depend the rational treatment of the majority of diseases.

In a paper which I wrote in the spring of 1909, and published in the *Medical Record* early in June of that year, I gave the results of a series of about 250 urinalyses which proved, to me at least, that there was a close relationship between excessive urinary acidity and indicanuria. My work since then, as well as that of a number of friends and correspondents, has only served to corroborate this finding. Evidently the condition which is known to cause the presence of indican in the urine is also responsible for a marked increase in the acidity. In the above paper I also called attention to the fact that practically 25 per cent. of the whole series showing excessive acidity also evidenced casts, usually of the hyaline type, and, at times, traces of albumin. It is pleasing to note that investigators elsewhere are corroborating these findings. Von Hoeslin¹ states that albuminuria and cylindruria are in some cases directly dependent upon the acidity of the urine. In these cases albumin and the formed elements disappear entirely or diminish in degree if the urinary acidity is decreased by the administration of sodium bicarbonate. He believes that it is necessary to determine the relationship of all albuminurias to the existing acid index.

Another very common disturbance in the relations of the urinary findings is that with an excessive acidity there is frequently found a markedly

1. München. med. Wehnschr., Aug. 17, 1909.

lowered urea-index. The total solids are decreased in some cases as low as one-third of the normal. This shows conclusively that urinary hyperacidity is associated directly with the metabolism. The urea-content is diminished because the urea-precursors are neutralized by the excess of abnormal acid-substances in the blood and eliminated as ammonia compounds. As a result the amount of ammonia in the urine is usually excessive in these cases. Then again, since the solids are often so decidedly diminished, it would seem that the organism is storing up trouble for itself in the form of the effete metabolic products which should normally be eliminated. This seems to be proved true by the not infrequent "crises" in which the individual who for weeks and months has been eliminating much less than the normal is suddenly taken seriously ill and the urine shows not only a tremendous acidity (265 degrees was, I believe, the highest figure seen in my laboratory), but the solids are also markedly increased. Naturally in these cases there are abundant evidences of renal irritation.

It may not be out of place here to call attention to the fact that upon the normal alkalinity of the blood depends two of its most important functions, oxygen-carbon-dioxid exchange and phagocytosis. Any condition or combination of conditions which would tend to decrease either of these powers must evidently have an important and wide-spread influence upon the general disease-resisting capacity of the organism. Acidemia, or diminished blood-alkalinity, will be found in practically all chronic diseases and, for that matter, in many acute diseases; and it is confidently believed that this factor of urinary hyperacidity is of sufficient importance to be known and its variations carefully watched in all cases. One can quickly corroborate these statements by making an examination of the urinary acidity of a twenty-four-hour specimen, of course, in the most frequently encountered condition of lowered resistance, the common cold. The acidity is almost invariably increased; and, what is of more importance, demonstrating even more conclusively that this matter is worthy of consideration, the administration of alkalis will do much to favor the breaking up of the cold.

I could enumerate case after case in which the urinary findings and ultimate outcome proved unquestionably that acidemia is a condition worthy of careful consideration. Two or three will suffice here: A colleague while visiting in Seattle was invited to see a case of severe throat ulceration which was interesting because of the extent of the disease and its intractability. The little girl had been for several weeks suffering with a membranous condition of the throat and pharyngeal walls which was becoming progressively worse. Heroic doses of diphtheria antitoxin, swabbings with silver nitrate solution and the best treatment that one of the leading specialists could afford seemed without avail. My friend asked if the urine had been examined. No. Might it not be done at once? Certainly. A specimen obtained in the office and tested in the acidimeter showed an acidity of nearly 180 degrees. A twenty-four-hour specimen which was begun immediately was tested the next day and the acidity found to be practically the same. The case was treated with a sodium bicarbonate mixture until the acidity of the urine was normal, and within a few days the membrane and every evidence of the condition had disappeared save a marked hyperemia of the pharynx.

Again a prominent business man in Washington, D. C., was suffering from a nervous condition which had baffled a number of the best physicians there. He

accidentally came under the notice of a friend of mine and it was suggested that the urine be carefully examined. It was found to be excessively acid and the commonly-occurring associated findings mentioned before were also thoroughly in evidence. To make a long story short the sufferer, who had almost given up hope, was treated as an acidemic and within a few weeks was another man. This sounds almost like a patent medicine story; but it is not.

Still another case which I have watched personally for considerably over a year. A young man suffered from frequent epileptic seizures. When I was consulted the urine was, of course, examined. It was found to be excessively acid, much indican was present and the solids were very low. The acidity was reduced, the indican eliminated and to make another long story short the seizures ceased, to return only when the conditions were not as carefully watched as they should have been. The only treatment has been to keep down the acidity and to prevent the circumstances which caused it. In about eighteen months there have been only two or three attacks and the urine passed before and after them was excessively acid and toxic.

In discussing this subject last summer with Dr. Frederic E. Sondern, of New York, he made a remark which will bear repetition here. In answer to a question concerning the difference between "acidemia" and "acidosis" he said that β -oxybutyric acid or its congeners was an essential to true acidosis. This, then, shows that there is a decided difference between the acid-condition of diabetes mellitus and the condition called acidemia now under discussion. The treatment may be essentially the same, and, for that matter, a part of the underlying cause the same, but the two conditions are essentially different and must not be confused.

Doctor Sondern also said that it would be something worth while if the "acid-substances" which evidently cause this troublesome condition could be isolated and named. Possibly this may be accomplished later, but in the meantime we must be satisfied with knowing that they are there and that their presence warrants attention. In all probability these "acid-substances" are closely related to the sulphuric acid products of intestinal putrefaction, to indolacetic acid, indican and skatol. For clinical purposes, however, it is not always absolutely necessary to know the definite scientific name of the *causus mali*. The fact that it is there and the means known whereby its effects can be counteracted is more than enough for all practical purposes.

It might be well here to give the principal factors which cause variations in the reaction of the urine. The acidity is increased by auto-toxemia, fever, diminished output of urine, the ingestion of an excess of proteid food and certain more or less obscure metabolic disturbances, among which diabetes mellitus stands first. On the other hand the main factors causing a diminished acidity of the urine are alkalies taken internally, the ingestion of fruit acids, cachexia or a marked diminution in the metabolic activities of the body, and diuresis. It is well to remember that diuresis decreases the acidity of the urine and that the decrease is proportional in degree to the extent of the diuresis no matter how the increased flow of urine is brought about. One other important factor must not be overlooked. Any circumstance which causes fermentation of the urine, no matter whether *in vivo* or *in vitro*, will reduce its acidity. For this reason when cystitis or prostatitis is present due allowance for these conditions must be made. Again the urine should be examined as

soon after the collection as possible and steps taken to prevent the onset of the usual ammoniacal fermentation for obvious reasons.

It would seem from the foregoing that the following conclusions might properly be drawn:

1. The study of the urinary acidity and its relations is worthy of much wider attention.

2. Its clinical significance is of importance in *all* disease conditions, but more especially in the indefinite and obscure chronic diseases.

3. The acid-index is a factor of considerably more importance than has yet been supposed and has an intimate relation with the phenomena commonly found with intestinal putrefaction and autotoxemia.

4. The urinary acidity is not only of importance in diagnosis, but also serves as a valuable guide during the period of treatment.

5. The frequent finding of evidences of kidney irritation would lead us to believe that the conditions causing urinary hyperacidity are important predisposing factors in the causation of nephritis.

6. The test for the degree of acidity is simplicity itself and can be easily accomplished either with a burette or an acidimeter.

7. The clinical indications and therapeutic possibilities suggested by these findings will more than repay one for the slight trouble required in making the tests.

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DISCUSSION.

Dr. John Ritter, Chicago: This paper is interesting from the standpoint of one who is doing tuberculosis work. I read a paper a few weeks ago in Washington in regard to albuminuria in its relation to tuberculosis. It has been proved especially by French writers that a great many cases of albuminuria are really tuberculosis: that in many cases, in the young especially, in which we find albumin in the urine the physical findings will eventually disclose tuberculosis, and when the albuminuria ceases the tuberculous process in the lung is developed; that these tuberculous processes go on in the lungs, and finally a healing process takes place, and when it has occurred the albuminuria usually returns again. Among the French writers who have been working along this line, Professor Tiessier, of France, has followed thirty cases of from three to six years' duration, the patients having slight albuminuria in the beginning and at the time of death had pronounced tuberculosis. They began with a slight albuminuria that lasted four or five months without physical findings in the chest, but finally tuberculosis developed. These cases he designates by the sufficiently comprehensive name as cases of "pretuberculous albuminuria."

SOME OF THE NEWER IDEAS IN THE PHYSIOLOGY OF DIGESTION IN HEALTH AND DISEASE *

C. HUBART LOVEWELL, M.D.

CHICAGO

As disorders of digestion furnish the average practitioner with the largest part of his daily problems, any light which can be thrown upon these common but complex questions will be of interest to us all. Per-

* Read at the Meeting of the Jo Daviess County Medical Society at Stockton, Illinois, July, 1910.

haps in no other branch of medicine have greater advances been made during the last decade than in the problems of digestion. Even the eminent Ludwig, of Leipsic, was found to be in error. He had maintained that digestion was the result of chemical changes due simply to the presence of food in the stomach or intestines. Now, we know that the process of digestion consists of a complicated but complete sequence of events in which psychical, secretory and motor elements must be considered.

In spite of the colossal and inspiring researches of Pawlow and his fellows, by which, from a physiologist's point of view, the whole aspect of the digestive process has been changed, the medical profession as a whole has remained in more or less complete ignorance. Exception must be made in the case of those who are actively engaged in the teaching of physiology in the leading centers of medical education, who have followed the development of these problems with characteristic interest and who have been busily engaged in studying and classifying the results of these investigations.

It is more with the purpose of bringing to your attention a few of the results of these researches than to report any original work, that I have accepted the invitation of your secretary to supply a paper for this meeting.

The anatomy and physiology of the salivary glands as laid down in the text books are both familiar to you and I will not go into any description of these.

Some of the most interesting and valuable work done on problems of the physiology of digestion has been done by European investigators, and during the past few years great inspiration and impetus has been derived from the research and experimental work of the Russians.

The work by Pawlow and his co-workers was done at the Institute of Experimental Medicine in St. Petersburg. Unfortunately for us, many of the results of these investigations were recorded in Russian journals and consequently were inaccessible to the majority of medical men until a German translation of Professor Pawlow's lectures appeared. In the English translation of this book¹ published some four years later was presented in an exceedingly interesting manner the results of the research and experiments carried on in his laboratory. This directed the attention of physiologists generally to the problems of digestion and soon investigators all over the world were working at these studies with renewed interest and zeal.

Secretion of Saliva:—Carl Ludwig and Heidenhain long ago showed that there are two sets of nerves which call forth the secretion of saliva, one from the central nervous system, the corda tympani, which produces a saliva rich in fluid but poor in ferments, and one from the cervical sympathetic producing fluid small in amount but rich in ferment. Langley showed that the alternate stimulation of the two would cause an increase in amount of saliva which would result from the stimulation of

1. Pawlow: *The Work of the Digestive Glands*, London, 1902.

the sympathetic system only; that is, that there was a conjoint action of these two systems of nerves in the secretion of the saliva.

But Pawlow demonstrated that these glands possessed in addition a factor of specific excitability. He has shown that the secretion of saliva was influenced by psychic stimulation such as: 1. Longing for food; sight of food; thought of food; smell of food. 2. By direct stimulation by contact. That they possessed a definite physiologic sense.

Our own daily experiences teach us that the activity of the salivary glands is influenced to a considerable degree even before the introduction of food into the mouth. The sight or even thought of food when the stomach is empty is capable of setting up an active secretion of saliva, reminding us of the well known expression, "To make one's mouth water." Hence a psychic event, an eager longing for food, must be considered as one of the active causes of the salivary secretion. The secretion is also influenced very markedly by direct stimulation by contact of food in the mouth.

In addition Pawlow observes that the saliva is the first fluid with which objects entering the alimentary canal must come in contact. As host, then, it has many duties to perform and in fact we find it moistens the dry acts, as an aid to mastication, dissolves the soluble, envelops the hard with mucus, enabling it to pass easily down the esophagus, neutralizes strong acids and also performs a function which is rarely considered, but is of great importance, that of a washing out or cleansing fluid. Pawlow holds that substances which are placed in the mouth set up a secretion of saliva because we have here the seat of definite physiologic sense, and cites the following experiments as performed in his laboratory. Dr. Glinski isolated the orifice of the salivary glands in dogs, brought them out of the oral cavity and caused them to heal into the edge of the skin wounds. This method, though given publicity by Pawlow and his pupils, was first used by DeGraaf and described on plate from Rene de Graaf's treatise "*De Succo Pancreatico*" from "*Regneri de Graaf Opera Omnia*" Ludg Batav. 1677. The first experiments were done with the submaxillary gland. A small test tube was attached to the skin over the opening of the gland. The animal was then tempted with a piece of flesh, the tube immediately filled with the saliva. Applying a new tube and feeding the animal the meat the tube was also filled with saliva. Again applying a new tube and throwing a pinch of fine sand into the dog's mouth, the result was a copious secretion of saliva. The results were identical after applying a tip of feather dipped in an acid solution. In order to ascertain if all the glands concerned in the secretion of saliva were acted upon in a similar manner, another dog was used in which the parotid duct was diverted outwards. The saliva being collected in the same way, the dog was tempted with a piece of meat, but strange to say no secretion resulted, and notwithstanding the animal was hungry and eager for the offered food. When raw meat was given the animal to eat, the secretion was again absent. Proceeding further, finely powdered dry flesh was given and all at once an abundant secretion was obtained. The introduction of stones into the mouth evoked no secretion at all, the animal being able to

remove them without the aid of any moistening, but the introduction of sand, however, was followed by a copious secretion of thin watery saliva, which enabled the animal to wash the sand from the surface of the mouth and reject it. The psychic effect of showing the dog meat and then tantalizing him was shown by the secretion ceasing as soon as the animal realized that it was being played with and that there was no intention of really giving it the food.

These experiments, enforced by similar results in dogs with both glands exposed and in repeated instances on different dogs, demonstrated a specific rather than a general excitability of these glands, as has been commonly thought.

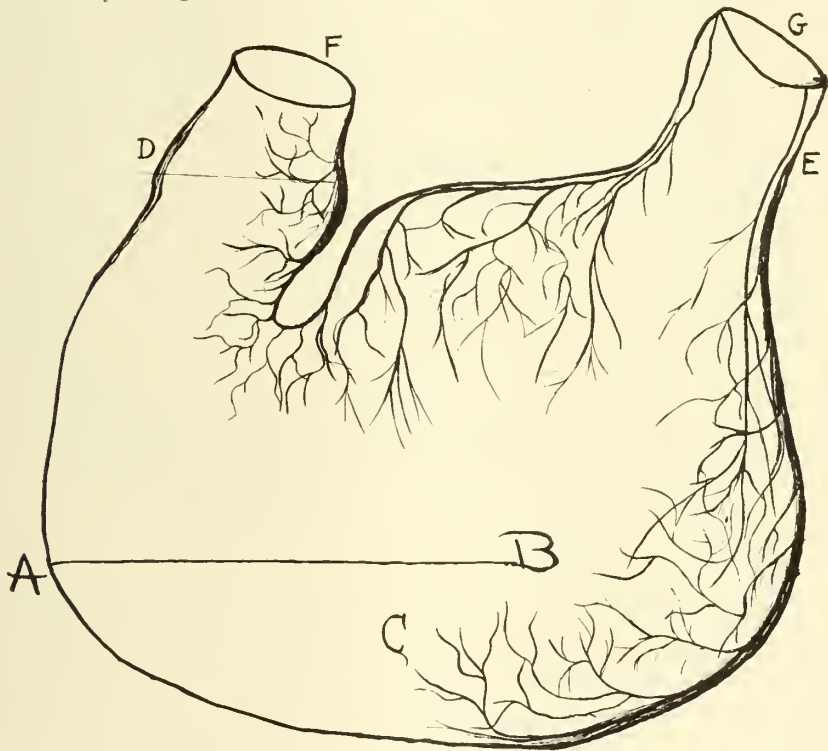


Fig. 1.—Pawlow Pouch. A, B, incision; C, flap to form stomach pouch; D, anterior vagi plexus gastricus; E, posterior vagi plexus gastricus; F, pylorus; G, esophagus.

Gastric Secretions.—Believing that much definite information in regard to the secretion of gastric juices could be obtained by experimenting on lower animals, Pawlow instituted a series of experiments on dogs, in which he had made a special separate stomach pouch and fistula, in such a manner as to divide the organ into two portions so that by uniting the edges of each two distinct bags or pouches were formed, the larger being continuous with the esophagus and duodenum, while the smaller one is converted into a blind pouch with a fistula leading to the abdominal surface. The two stomachs are continuous only by the peritoneum and muscularis, and are separated by the mucous membrane which forms the

floor of the upper portion and the roof of the lower pouch. Both stomachs have the same nerve and blood supply and react the same on account of the fact that the vessels and nerves are located in the muscularis and serosa. When, therefore, the secretion of gastric juice is stimulated in any manner, a juice can be collected from the fistula which is identical with that of the stomach itself. This fluid can be readily studied, as it is free from any contaminating food or other substances.

The first normal impulse in gastric secretion is mental and has been termed appetite juice by Pawlow. In determining this, dogs were used in which, in addition to the stomach pouch, the esophagus had been divided and the cut ends brought out to the skin surface. In dogs thus prepared, the swallowing of stones or small pebbles which passed down the esophagus to be dropped out of the opening in the neck of the animal, failed to have any effect on the secretion. The same results were obtained when the dog's tongue and inside of mouth were stimulated by diluted acids or bitter substances, but when some pieces of fresh meat were cut up and handled in front of the animal, there followed, invariably, a strong secretion of gastric juice from the gastric pouch.

In this later experiment, Pawlow confirmed the experiments of Bidder and Schmidt, made forty years ago, that the offering of food to a healthy dog produced a flow of gastric juice. When the meat was then fed to the animal but was passed out of the esophagus as before, there was a secretion of juice but smaller in amount.

Repeated experiments upon dogs by Bickel and Sasaki² have shown that anger, mental irritation, and emotional disturbances exert a decidedly inhibitory influence upon gastric secretions. Beaumont,³ as long ago as 1833, made the remark in his observations of gastric secretions in the French voyageur, Alexis St. Martin, that "Fear and anger check its secretion."

That the same is true of the human stomach has been shown by a long list of careful observers in experiments on suitable human subjects.

Effect of Saliva on Gastric Secretion.—Fricker, of Berlin, reports a series of experiments in his own person, confirming the assumption that the act of chewing promotes the secretion of gastric juice, but his contention that the arrival in the stomach of saliva has any specific stimulating influence on the secretion of gastric juice, is disproven by the researches of Pawlow and especially of Troller,⁴ who proved that the gastric secretion was entirely uninfluenced by the presence of saliva in the stomach.

Pawlow and Popielski have shown that by the action of certain proteids upon the mucosa of the pyloric end of the stomach, there is excited in the glandular structure of the part, a substance which passes into the general circulation, returns to the gastric mucosa and excites therein an active secretion of gastric juice. This phenomenon was observed repeatedly after the destruction of all nerves connecting the stomach with the

2. Bickel and Sasaki: Deutsch. med. Wchnschr., 1905, xxx, 1829.

3. Beaumont: Physiology and Experiments, Burlington, Vt., 1847.

4. Troller: Ztschr. f. Klin. Med., 1899, xxxviii, 183.

ganglionic centers. Edkins⁵ has shown that this is not the result of a local reflex in the gastric walls, but is due to a chemical influence. Edkins has also demonstrated that the contact of certain food products, such as dextrins, maltose and dextrose, and especially extract of meat, with the pyloric end of the stomach, causes the formation of a chemical

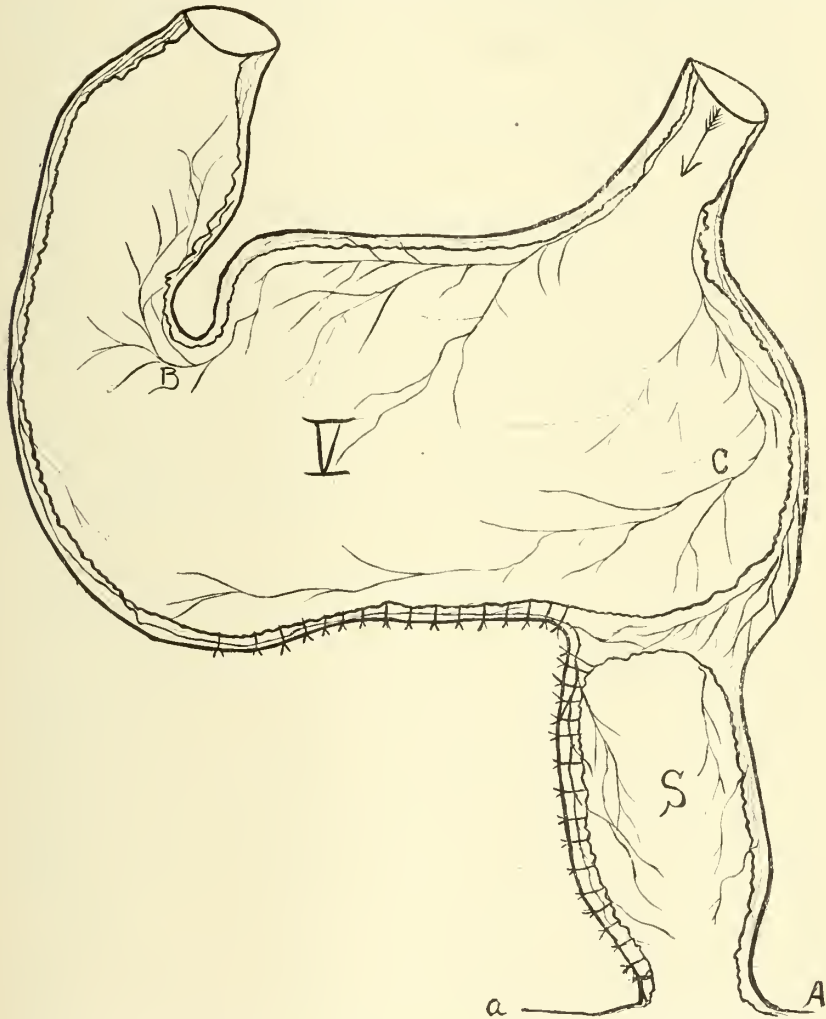


Fig. 2.—Pawlow Pouch (completed). V, cavity of stomach; S, Pawlow's pouch; A, abdominal wall; B, anterior vagi; C, posterior vagi.

substance, a hormone or secretagogue, which being absorbed by the general circulation acts as a powerful stimulus to gastric secretion.

Many observers in experimenting with bitter stomachics,⁶ have concluded that these, of themselves, introduced directly into the stomach

5. Edkins: *Proc. of Royal Soc.*, 1905, Series B, 376.

6. Lavenson: *Arch. Int. Med.*, 1909, iv, 280; Borrisow: *Arch. Exper. Path. u. Pharmacol.*, 1904, li, 363; Hoppe: *Berl. klin. Wehnschr.*, 1905, xxxiii, 1038; Straschesko: *Russk. Vrach.*, 1905, quoted by Hoppe, *Berl. klin. Wehnschr.*, 1905, xxxiii, 1038; Kaznelson: *Arch. f. d. ger. Phys. (Pflügers)*, 1907, cxviii, 327.

induce no secretion but if taken by mouth or shortly before a solution of beef juice, a considerable increase of juice resulted.

In this connection it is pertinent to inquire whether we have not been directing too much attention to the drug treatment of certain disorders of digestion and neglecting very valuable and helpful agencies. As has been shown, both the psychic and dietetic are rational methods of inducing secretion in the stomach and should be given more of our thought and attention.

Here again we are impressed with the wonderful adaptation and interrelation and dependence of the digestive organs for, as we shall observe later, a copious flow of gastric juice not only performs its digestive function in the stomach, but because of the stimulating effect of gastric HCl on the duodenal cells, an abundance of pancreatic juice and bile as well as the intestinal juices are secured. In addition to the part which HCl plays in preparing the food for the action of pepsin, it also has a decided action in stimulating peristalsis in the intestines. The observations of Pawlow and his colleagues, showing that the actual percentage of HCl is constant and that changes in diet and influence of drugs only affect the secretion of HCl quantitatively, have been confirmed by many.

They found that the use of meats and animal extractives caused a prolonged secretion of acid juice while vegetables caused a much shorter and smaller secretion. This would seem to confirm the teachings of Jurgenson, Von Jaksch, and Sohlern, who empirically advised against the use of meats in cases of hyperchlorhydria.

Portis,⁷ in a series of interesting experiments, following the methods of Pawlow, confirmed these observations. He also cited the report of Bickel, who conducted a series of experiments on a normal stomach of an adult girl, who because of a benign stricture of the esophagus had a gastric fistula, and in imitation of Pawlow's work, cut the esophagus across, the upper end being brought out to the skin surface and the lower end closed. Bickel's conclusions that the same principles hold in the case of the human stomach have been confirmed by several observers.

Portis concludes that vegetables, especially a vegetable puree made without the use of any meat, is an ideal diet in hyperchlorhydria. Next to these milk, cream and butter, together with egg albumen and toast may be useful, also alkalies such as sodium bicarb. taken in large quantities one-half hour before meals. Oils and fat act in the same manner and are also best given before meals. Of the drugs belladonna and bromid of strontium were the only ones that affected the secretion to any marked extent.

Gastric secretion is probably stimulated by three principal factors:

1. A purely psychic stimulus, as the eager longing for food. Appetite juice. Pawlow says: "A good appetite in eating is equivalent from the outset to a vigorous secretion of the strongest juice; where there is no appetite this juice is absent. To restore appetite to a man, means to secure him a large stock of gastric juice wherewith to begin the digestion of the meal." This fact does not apply, of course, in cases of simple

7. Portis: ILLINOIS MEDICAL JOURNAL, 1909, xv, 267.

atony of the stomach or carcinoma. Here, we often have ravenous appetites but on account of structural changes, there is an absence of HCl which is characteristic.

2. That resulting from the eating of food of pleasing taste and form augmented by the stimulating influence on the mucous membrane of certain extractives contained in the food itself. Clinically you can frequently get a patient to take considerable quantities of food by urging him to taste and eat even a small quantity of some appetizing or attractive food.

3. By the specific act of some chemical substances formed in the pylorus and acting through the blood, similar in form and action to the "secretin" of Bayliss and Starling.

Movements of Stomach During Digestion.—In the process of kneading and grinding, by which the food is mixed with gastric juice, there are two principal divisions. One occurring in the fundus or cardiac portion by which the easily mobile, more fluid and more gruelly portions of food are gradually pressed downward into the pyloric portion; the coarser and more dense portions remaining to receive a longer contact with the digestive juices. Here the principal action is probably of a chemical nature.

The second, a more mechanical action taking place in the pyloric end where by its more powerful contraction, the bits of food are further broken up and mixed and ground up with the gastric juices.

Very interesting and valuable information in regard to the motor activities of the stomach has been furnished by the recent studies of Kastle, Rieder and Rosenthal⁸ in kinematographic reproduction of the physiologic movements of the stomach. They found that a fold of the stomach wall formed above the pylorus and protrudes inside. This gradually extends inward and growing longer and longer with the tip curving down toward the pyloric outlet. In these moving pictures it appears as though this fold were pushing or pressing down the food through the pylorus and after this was accomplished the fold receded and was reformed, repeating the process. The character and movements of this fold were distinctly different in normal stomachs and in cases of carcinoma, and the authors express hope that this method of examination will prove of great value in diagnosis.

Cannon⁹ has shown by means of Roentgen ray photographs that by the action of strong circular fibres placed between cardia and pylorus, the two portions of the stomach are partially separated from each other and that the principal peristalsis occurs in the pyloric portion. It has also been demonstrated by the same observer that emotion plays a considerable part in the movements of the stomach, and that peristalsis ceases whenever the animal manifests signs of rage, distress, or even anxiety.

In a series of experiments on cats, Hedblom and Cannon¹⁰ have concluded that coarse branny food leaves the stomach slightly faster than similar foods of finer texture, but that when hard particles are present in the food, the discharge is considerably retarded. Very hot or very cold

8. Zeitschrift für Röntgenkunde, vol. xii, 1910.

9. Cannon: Amer. Jour. Physiol., 1898, i, 359.

10. Hedblom and Cannon: Amer. Jour. Med. Sc., cxxxviii, 504.

food does not cause any considerable variation in the normal rate of discharge from the stomach. Food of high acidity takes much longer to leave the stomach than food which is only faintly acid.

The clinical observation that inflammation of the appendix may markedly affect gastric motility and digestion is strengthened and confirmed by these observers.¹¹ Cats were etherized and under aseptic precautions a few drops of croton oil were injected into the cecum through a small median incision in the abdominal wall. The next day they were fed the standard potato food mixed with bismuth subnitrate and the movements of the food studied with the *x*-ray. In every case the gastric discharge was much slower and the passage of food through the small intestines was greatly retarded. Their conclusion, therefore, seems perfectly justified that irritation of the colon can cause marked retardation in the rate of exit of food from the stomach and in the passage of food through the small intestine. This is interesting in view of the frequent clinical occurrence of gastric disturbances in inflammation of the cecum and appendix.

Kaufmann¹² and Friedenwald¹³ have pointed out that cholelithiasis is frequently accompanied by hyperacidity and Friedenwald¹⁴ observes further that any condition that leads to biliary retention may produce this condition. Perigastric and duodenal adhesions may also affect the motor functions of the stomach. Billings¹⁵ says that these are most frequently due to cholecystitis and observations made in the surgical treatment of this condition would seem to confirm his statement. We are at the present beginning to appreciate more and more the importance of the motor functions of the stomach and that its motor and secretory powers, besides being directly related to each other, play a large part in the whole digestive process.

Cause of Relaxation of Pyloric Sphincter.—Cannon¹⁶ has recently emphasized the part that HCl plays in controlling the discharge of food from the stomach into the duodenum. He has shown that the pylorus remains closed until an acid reaction appears in the chyme on the gastric side of the sphincter, whereupon it relaxes and some of the chyme passes into the duodenum. The presence of acid chyme in the duodenum incites the closure of the sphincter and keeps it closed until the pancreatic juice and bile, also caused to flow by the acid contents of duodenum, have neutralized the chyme. When this has occurred the pylorus opens again and more of the gastric contents are expelled. The time of appearance of free HCl in the pyloric end of the stomach has a very important bearing on the time at which the gastric contents begin to pass into the duodenum. Appetite juice appears early and as carbohydrates do not combine with acids, free HCl appears early and carbohydrate food passes out of the stomach within fifteen or twenty minutes.

11. *Idem.*, p. 519.

12. Kaufmann: *Amer. Med.*, 1903, vi, No. 20.

13. Friedenwald: *Med. News*, July 22, 1905.

14. *Osler's Modern Medicine*, v, 114.

15. Billings: *Amer. Jour. Med. Sc.*, cxxxiv, 625.

16. Cannon: *Amer. Jour. Phys.*, 1907, xx, 283.

Cannon has shown that proteid food combines with the acid, and free HCl does not appear until later, thirty minutes to one hour. Fats, having an inhibitory effect on the secretion of HCl, take a much longer time, from one to two hours. Thus in hyperchlorhydria, proteids and fats would tend toward prolonged gastric digestion and with less free acid. The slowing of the gastric discharge, he holds, is due not so much to the effect on the pylorus on its gastric side as to the fact that a longer time would be required to neutralize the highly acid chyme in the duodenum.

While we recognize the importance of the various functions of the stomach we must not forget that man can exist without any stomach, as has been shown by the surgeons, and that in cases of achylia gastrica, patients can maintain a fair state of nutrition without any gastric juice at all.

In summing up the evidence in regard to gastric digestion, it is but fair to state that while it is the general opinion of physiologists as well as of experienced clinicians, that the principal work of the stomach is in preparing the food for real digestion in the intestines, still we believe that this is very important and that any departure from its normal functions must and does materially affect the working of the balance of the digestive tract.

Intestinal Digestion.—As the acid chyme is pressed through the pylorus into the duodenum, it is brought into contact with three different juices; the secretion of the pancreas, the bile, and the intestinal juices. Heidenhain and Pawlow have shown that the pancreatic secretion is influenced to a certain degree by nerve fibres from the vagus and splanchnic nerves and have compared it with the secretion of saliva.

According to Pawlow the composition of the juice varies according to the character of the food, the proteolytic ferment being increased by the ingestion of meats, while the amylolytic ferment is increased by a starchy diet.

Following Pawlow, Popielski¹⁷ and Wertheimer¹⁸ have shown that there are other than the nervous factors concerned and that the secretion was present when the acids were introduced into the duodenum, even after all nervous connection had been severed from the pancreas.

Believing more in a chemical than in a nervous mechanism, Bayliss and Starling took up the work at this point and in the Croonian lecture for 1904, "The Chemical Regulation of the Secretory Process," read before the Royal Society of London, they described a special substance, which they called secretin. This substance they claim has a specific action on the pancreas and constitutes the only natural cause of its secretory activity. This they base upon experiments in which an extract made from mucous membrane of the duodenum with HCl was injected into a vein and which brought forth the pancreatic secretion at once. Their explanation being that the HCl as it passes out of the stomach and comes in contact with duodenal cells, liberates a substance, which being absorbed into the general circulation, passes to the pancreas and there stimulates

17. Popielski: *Gazette Clinique de Botkin*, 1900.

18. Wertheimer: *Jour. de Physiologie*, iii, 1901.

the secretion of juice. They assert that it is a staple substance, since boiling nor the addition of alkalis to neutralize or even render it alkaline did not affect its activity. It was also productive of a copious secretion when injected into other animals. That it acted independently of the nervous system, was shown by experimenting on dogs, in which all nerve communication had been severed from the duodenum and confining the influence entirely to the blood.

Wertheimer¹⁹ had already shown that irritation of the duodenum by acids affected the pancreatic secretion through the blood, and on account of the general confirmation of these observations by investigators since, it would appear that while the exact chemical nature of secretin has not been determined, the mechanism of secretion of the pancreatic juice has been solved.

It is interesting to note further that the presence of bile being just as necessary as the pancreatic juice in the digestion of foodstuffs in the intestine, the simultaneous secretion of these two juices is provided for by the formation and absorption of secretin. Thus we have in this substance a double function of activating the secretions of both the liver and pancreas. Another instance of the close association of these two important secretions is shown, anatomically, by the close proximity of the openings of these ducts, in many instances both being joined in one. Physiologists tell us that the pancreatic juice itself, as secreted, is very weak in its proteolytic action and that its chief activity is due to a substance called trypsinogen, instead of trypsin, as formerly taught. Here we are again impressed with the wonderful adaptability and dependence of the organs of digestion.

Pawlow and his pupils have shown conclusively that as soon as this juice enters the duodenum, its presence causes a profuse secretion of intestinal juice, which contains an active ferment called enterokinase. This in turn acts upon the trypsinogen of the pancreatic juice and forms the substance called trypsin, which is one of the most active proteolytic ferments known. The statement of Pawlow that, by altering the amount and character of the pancreatic secretion, the organism can adapt itself to the needs of an exclusive proteid or carbohydrate diet, is still an open question. The secretion of bile goes on continuously as does the urine, although it varies in character and amount, depending on the kind of food being digested, meat having the greatest effect and starches the least. This is undoubtedly due to the fact that with a proteid diet the formation of secretin is greater in amount.

The conclusion that bile is an intestinal antiseptic is now known to be incorrect. The marked putrefaction of intestinal contents observed in cases of obstruction of the common duct by stone, acute inflammation or the contraction or pressure of malignant disease, is not due to the lack of bile as an antiseptic but rather to the presence of fat, which readily decomposes and which, had the bile been present to assist the pancreatic juice, would have been digested and absorbed.

19. Wertheimer, C. R.: Soc. de Biologie, 1902, p. 475 (Comptes rendus Transactions).

There is another fallacy which we are slow to give up and that is the giving of medicines to increase the flow of bile. It has been shown repeatedly, both in animals and in human beings, that there is no drug that will increase the total amount of bile in twenty-four hours. Bile acids or bile itself will do this, but nothing else.

The evacuation of the gall-bladder and the discharge of bile during digestion, according to Bruno, are brought about by the effect of the passage of the food from the stomach into the intestine. And since the passage of the chyme into the intestine is governed by the character of food, the discharge of bile is different for the different foods, greater for the proteids and less for the carbohydrates. As yet no secretory nerves have been found for the liver and the inference is that the secretion is controlled entirely by stimuli brought to it by the blood.

CONCLUSIONS

The desire for food or appetite, as we call it, by reason of its being the most powerful excitant of the gastric juice, has a marked influence upon the whole digestive process.

Shakespeare was not far wrong when he had Macbeth, shaking and apprehensive, exclaim to his lady: "Now, good digestion wait on appetite, and health on both!"

In addition to the various psychical elements concerned, appetite is influenced by the physical conditions of the stomach and the needs of the body in general. Any condition of weakness or deficient circulation of blood in the stomach lessens the appetite. Mild condiments to render the food more palatable, together with an atmosphere of good fellowship and cheer, will frequently add to an otherwise indifferent appetite.

Soups or broths made from meat, preceded by some bitter tonic, will greatly assist in forming a zest for food. Thus, by increasing the tone and circulation of the stomach and appetite coming with the eating, a fair meal may be taken. Rapid eating with imperfect mastication, together with physical exercise, worry or mental irritation directly after the meal, may interfere in a marked degree with the motor and secretory functions of the stomach.

Any variation in the acidity of the gastric juice is followed by changes in the secretions of the pancreas and liver, as well as in that of the intestinal juices.

Cohnheim says that the motor function of the stomach is its most important factor in digestion, and we have seen how this is influenced by the character of the gastric contents.

Acute inflammations, perigastric adhesions, disease of the gall-tracts, especially cholecystitis, and diseases of the pancreas, by causing a motor insufficiency of the stomach, may likewise exert a decided influence on digestion. While it is possible to maintain life after the stomach has been entirely removed, it is only by imitating the work of the mouth and stomach in preparing the food for use. And so in a large measure we know that digestion and absorption in the intestine is dependent upon

the normal activities of the stomach. While we speak of gastric and intestinal indigestion, in many cases it is difficult to make a distinction, since sooner or later any departure from the normal function in one part of the digestive tract is followed by derangement in the other parts.

In addition to the special factors that we have mentioned we may say that good digestion depends upon a contented state of mind, restful sleep, fresh air, sunlight, physical exercise and the proper activity of each of the various organs that make up the alimentary tract.

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THE PATHOLOGY OF DIFFUSE SUPPURATIVE PERITONITIS AS AN INDICATION TO ITS TREATMENT

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1. *Anatomical Considerations*.—The peritoneal sac with its multitudinous folds possesses an area equal in extent to that of the skin. The lesser peritoneal cavity communicates with the greater through the foramen of Winslow and as this aperture is readily closed by adhesions the relatively infrequent extension of an inflammation from the greater to the lesser sac is explained. The contact of the parietal and visceral peritoneal layers accounts for the division of the greater cavity into compartments more or less separated from each other. These spaces derive their walls from agglutinations incident to a peritonitis. The mesentery adhering to the parietal peritoneum divides the greater sac into a right and left compartment; the transverse colon tends to create an upper and a lower space; the suspensory ligament of the liver produces a right and left subphrenic recess; and in the female the uterus with its appendages resolves the pelvic cavity into an anterior and posterior pocket.

The tendency to partition the peritoneal cavity during inflammation often limits the infection and confines it to a definite area. In other instances it circumscribes an infection at a point distant from its origin and becomes a dangerous complication.

The elasticity of the peritoneum is evidenced by its ability to cover rapidly growing tumors, to envelop the uterus at term, and again to fit it smoothly in its involuted state. The peritoneum is loosely connected to the organs that it covers and this condition increases its mobility. The elasticity and mobility of the peritoneal membrane enables it to protect itself against infection. A perinephritic abscess will not break through into the peritoneal cavity as long as that membrane is able to recede from the wall of the abscess cavity.

A glance at the arrangement of the peritoncum will show that the pelvic cavity contains a very small portion of the peritoneal area and this accounts for the beneficial results of the Fowler position, as toxic fluids gravitating into the pelvis will of necessity be absorbed very slowly.

The circulation underlying the peritoneum is so great that the distended blood vessels are capable of containing the entire blood in the body.

The peritoneum is dependent upon this feature for its resistance against infection. Meisel and Lennander cite numerous examples of suppurative processes in the walls of intestine and surface of peritoneal covered organs successfully resisted by the peritoneum as long as its blood supply remains intact. Thrombosis and obliteration of the blood vessels tend to a rapid involvement of the peritoneum and this is demonstrated by the greater tendency to perforation in the recurring forms of appendicitis. Meisel relates a case in which a suppurative kidney lesion took eight years to produce a general suppurative peritonitis by perforating the membrane. These examples should be a warning against the expectant treatment of infectious processes in the proximity of the peritoneum.

2. *Functional Considerations*.—Wegner determined that the peritoneum could absorb a quantity of fluid equal to from 3 to 8 per cent. of the body weight in one hour. The rate of absorption depends upon the intravascular tension and possibly also on the rapidity of the current in the blood vessels. Peiser proved this by demonstrating that the rate of absorption through the peritoneal membrane was markedly reduced when salt solution had been previously introduced intravenously, hypodermically, or by the bowel. Inflammation of the peritoneum, according to Peiser's experiments, caused an immediate increase in the absorptive functions, but this quickly subsided and at the end of an hour the rate of absorption was very low. This relative cessation of absorption is explained by Lennander to be due to thrombosis and compression of the lymph vessels, but Peiser has shown that the same inhibition occurs when fluids of an indifferent character, i. e., free from bacteria, are employed. In order to account for diminution of absorption it becomes necessary to assume the occurrence of a state of absorptive equilibrium. Peiser attempted to destroy this stage of equilibrium by injecting 15 c.c. of salt solution into the peritoneal cavity of rabbits that had been infected with colon bacilli one hour previously. In these experiments the injected animals died very rapidly, while the controls remained alive. Flushing the peritoneal cavity with one litre of salt solution one hour after the time of infection with a definite quantity of colon bacilli also killed the animals; the controls remaining alive.

The significance of these experiments was further enhanced by determining the number of colonies of colon bacilli growing from the blood drawn from the common carotid artery, at intervals of one-half hour. The number of colonies increased enormously after the injections and flushings. In these experiments the infectious material was thrown into a peritoneal cavity entirely unprepared for an assault of this kind; a condition which rarely occurs in the human subject except through accident, gunshot; injury, etc., through the sudden rupture of an abscess situated in a peritoneal covered viscus, or through the rapid perforation or rupture of the intestine from other causes. In the greater number of instances that result in peritoneal infection, the leakage of bacteria takes place gradually, causing a reaction of the peritoneum which undoubtedly changes to a marked degree both the rate and character of its absorptive tendency when it receives its large dose of infectious material, such as

would occur from the rupture of a previously inflamed appendix. It is therefore evident that an experiment which is able to mimic the conditions under which peritonitis occurs in the human subject but partially, is only of value in a general way for the purpose of indicating or contra-indicating certain methods of treatment.

This great absorptive power, while protecting the individual from developing peritonitis from mild infections and bacterial leakage up to a certain amount, constitutes one of the greatest dangers to the patient's life when the amount of infectious material is great and its toxicity high. Under such circumstances, if unchecked, it inundates the general system with toxic fluids to an extent which paralyzes resistance and terminates vital functions. It will be seen that it is largely upon our ability to influence the degree and effect of this absorptive power of the peritoneum, that our success or failure in the management of diffuse peritonitis will depend.

3. *Bactericidal Power*:—Noetzel experimenting on rabbits, found that while the intravenous injection of .1 c.c. of a culture of staphylococcus resulted fatally, the animals did not present a single untoward symptom from the introduction of 10 c.c. of the same culture, into the peritoneal cavity. Wherein lies this apparently enormous bactericidal power of the peritoneum? Investigation revealed that the ability of the peritoneal lymph to destroy bacteria did not exceed that of the blood and hence could not account for the phenomenon which finds its explanation in the enormous area of the peritoneal membrane and the manner in which the infectious material is distributed over its extent.

The work of Meisel demonstrated that colored particles introduced into the peritoneal cavity could spread over the entire peritoneal surface in three-quarters of an hour. In other experiments the time required would vary between three and four hours. Intestinal activity and frequent contractions of the diaphragm acted as accelerators of the distributive process. Meisel holds the view that apparently unconnected abscesses in the peritoneal cavity, occurring during the course of or at the termination of a diffuse peritonitis, result from this primary wide-spread distribution of the infectious material, which in some areas disappears through absorption and in others are reacted against by a suppurative process and isolated by the formation of adhesions.

There exists in this distributive function of the peritoneum, influenced in its rapidity by intestinal and diaphragmatic activity, another great differentiating factor in the course and behavior of diffuse peritonitis. An infection spread over the peritoneal membrane gradually will be slowly absorbed and consequently tolerated, while a virulent infection distributed in the time of three-quarters of an hour, of necessity rapidly absorbed, will tend to overcome the systemic resistance and tolerance by the enormity of its dose. The fatality here results from an acceleration of a peritoneal function. In part, this function may also account for the presence or absence of pus reaction in the case of mild infection. An infection of small virulence spread over the peritoneum rapidly and absorbed would not produce a pus reaction in the peritoneal cavity. Pus

would in all probability be produced if the distribution and absorption were delayed and the infectious material allowed to remain sufficiently long in a circumscribed area.

The ability of the peritoneum to limit the migration of an infection and to more or less completely isolate the infected area, consists in the tendency of contiguous peritoneal surfaces to adhere to each other under certain conditions. The usual contiguity of peritoneal folds, increased by intestinal distention and the influence of a certain degree of irritation are the factors concerned in the production of peritoneal agglutinations. Experiment proves the absence of adhesions in very mild infections. From extremely virulent products the tendency to peritoneal agglutinations is likewise wanting. It is quite apparent, therefore, that in order to exhibit its adhesion phenomenon the peritoneum must sustain an infection sufficient in quantity and virulence to excite active peritoneal reaction; but not enough to inhibit and paralyze that faculty.

Adhesions may be either temporary or organic in character; when temporary, they consist of a fibrinous union between two peritoneal surfaces, the peritoneal epithelium of which is intact or capable of reconstructing its integrity. The organic adhesions consist of fibrous tissue beneath which the epithelial cells have been destroyed and little or no tendency exists to reconstruct them. Again, temporary adhesions may change into the organic variety, or they may resolve and disappear altogether, depending upon the severity and continuance of the irritant which resulted in their formation.

It has been observed and noted by many surgeons, that the peritoneal cavity which when observed at the time of an acute inflammatory stage, presented an intricate maze of adhesions, proved upon being opened some years later to be comparatively free from abnormal agglutinations. This fact has given rise to the view that a special tendency exists to re-establish the continuity of the peritoneal cavity, and with this the notion that adhesions might well be left to take care of themselves. Careful observation from a pathologic standpoint, and this is supported by the experiments of Meisel, demonstrates no such particular tendency to free the peritoneal cavity of adhesions, but explains the melting away of agglutinations through the fact that the great bulk of them are of a fibrinous nature and hence prone to dissolve and disappear in a comparatively short time.

The organic variety of adhesions, however, do not spontaneously undergo any change in texture and disappear. They may stretch, elongate, and otherwise change contour, but still continue to exist as fibrous bands of variable length and width, producing difficulties in proportion as they interfere with the motility of organs, and constrict the lumen of intestine. They produce loops and bridges beneath which intestine and omentum may become constricted. It will also be noted that the safety residing in the limiting adhesions of an intra-peritoneal abscess is often very ephemeral in nature, on account of the fibrinous character of the

bands. The literature is teeming with reports of death from sepsis occasioned by the pouring out over the peritoneal surface of the contents of an encapsulated abscess from which the limiting bands were dissolving.

4. *Causes of Infection*:—Infection, generally, and some observers say always, enters the peritoneal cavity from or in connection with the organs covered by the peritoneum. The most frequent source of peritoneal infection is the intestine, specially its appendix vermiformis, which is responsible for about 90 per cent. of the acute inflammations occurring in the peritoneum. The remaining 10 per cent. result from perforation of ulcers in the gastro-intestinal tract, bursting of abscesses in the peritoneal-covered organs or encapsulated pus accumulations within the peritoneum, from direct extension by contiguity or continuity of infection in the peritoneal-covered structures, such as occur through the uterine wall and through the abdominal ostium of the Fallopian tube, and again from traumatic perforating injuries from without as exemplified by a stab wound through the abdominal wall. An injury of that variety might also open the intestinal tube and then present two causes of infection at the same time. The infections in connection with the performance of a surgical procedure by which the abdomen is temporarily opened is really an example of direct inoculation of bacteria; a condition similar in many respects to the infectious processes experimentally produced. Much evidence exists to prove that infection may be carried to the peritoneum by the blood stream. Cases of this form of peritonitis would properly belong to the hematogenic or so-called idiopathic variety of peritoneal infection. The literature is crowded with reports of peritonitis occurring during a pneumonia in which a culture from the peritoneum proved to be that of the pneumococcus. As no direct tract of infection could be demonstrated between the chest and the abdomen at the time of operation, the conclusion becomes inevitable that these instances were examples of a hematogenic variety of infection. Tilton reports a case of diffuse peritonitis during the course of a case of scarlet fever in which the operation failed to demonstrate that the infection came from any of the organs in connection with the peritoneal membrane.

Examination of cultures from the pus taken from cases of peritonitis show an almost unlimited variety of bacteria, among which the colon bacillus, bacillus lactis, the streptococcus pyogenes, the staphylococcus pyogenes aureus, and the varieties of staphylococci are very frequently encountered. From a practical standpoint we have little to do with the particular variety of microbe which infects the peritoneum. We are especially concerned with the amount and virulence of the infection, irrespective of its kind; and with the local and general condition of the individual in whom the process takes place.

Gravitz proved experimentally that the introduction of pyogenic bacteria into the peritoneal cavity did not always set up a peritonitis. Peritonitis did not occur when the number of bacteria was small. A comparatively large quantity was tolerated when the microbes were not suspended in irritating media.

Deve, from experiment and case observation, makes the statement that the normal body fluids, urine and bile, are not capable of producing a peritonitis when accidentally entering the peritoneal cavity. He also holds the view that bacteria, bacterial products, intestinal ferments, and solid particles, cannot, acting singly, set up a peritonitis. While all this may be true theoretically, it is a fact practically that in the production of peritonitis, as it generally occurs, the combination of bacteria and irritating fluids usually exists.

Developing further the cause of peritonéal infection we find occasionally its origin in such obscure conditions as embolism of the mesenteric arteries, phlebitis of the portal system, and umbilical phlebitis. More rarely suppurative processes in the mesenteric and retro-peritoneal glands, suppuration in the abdominal parietes, in the pelvic cellular tissue, in the peri-rectal tissue, in the peri-renal space, and pleural empyema, result in a peritonitis. Nor can we fail to mention that peritonitis now and then owes its origin to the extension of a psoas abscess, caries of the lower ribs and vertebrae, and suppurative osteomyelitis of the pelvic bones.

The ability of the peritoneum to protect itself against outside invasion by means of its elasticity, mobility, and vascular richness, is responsible for its security against infection from these causes, mentioned as being rare and infrequent. But as this security diminishes in direct proportion as the elasticity, mobility, and vascular supply of the peritoneum is reduced by inflammations in its neighborhood, we cannot afford to regard lightly even the rare causes of peritonitis. In connection with surgical procedures interesting the peritoneum Meisel has demonstrated experimentally that dry areas of peritoneal membrane are more susceptible to infection than moist portions. This fact has also been observed by Walthard. If this experiment has value it teaches the abdominal surgeon to keep the exposed peritoneal membrane moist during the operation.

Finally I would mention an origin of peritonitis which has not received attention in the later publications on the subject, viz, a congenital or acquired sacculation of the intestine. The writer has upon two occasions met with this condition as a cause of diffuse peritonitis. A sacculation may occur in the small or large intestine, upon its free or mesenteric surface. It consists of a mucosa-lined sac of variable size, in my cases from that of a pea to a walnut, springing from the wall of the intestine and generally communicating with its lumen by means of a small aperture. It contains fecal matter usually in the form of a hard spherical mass. Several of these saccules may be situated in proximity to each other, communicating with one another or with the intestinal lumen only. In one case a saccule was of walnut size springing from the cecum near the base of the appendix and projecting into the free peritoneal cavity. It contained a hard fecal mass. An orifice leading into the bowel lumen could not be demonstrated but had no doubt existed and become closed incident to the inflammatory process involving the saccule, much in the manner of the obliteration of portions of the appendicular lumen at the time of an appendicitis. The second case presented the formation of three small saccules in close proximity to one another,

originating in the mesenteric border of the ileum and lying between the layers of the mesentery. They contained hard fecal matter and communicated with each other, but apparently had lost their intestinal communication through the inflammatory process.

The various explanations for their existence are not susceptible of proof. That they are of intestinal origin is apparent from the fact that they are lined by intestinal mucosa and contain fecal matter. Consisting of blind extremities, communicating with the intestinal lumen by small apertures, these sacculi present in their physical conformation the characteristics of the appendix vermiformis and are consequently prone to the same pathologic processes and present in every way the same dangers to the peritoneal membrane. On account of their size and situation, their presence prior to operation cannot be determined. In the writer's cases the symptoms were those in connection with a case of appendicitis terminating in peritonitis. It therefore behooves an operator to bear in mind the possibility of sacculation that he may deal with the condition in a proper surgical way.

5. *The Character of Peritoneal Reactions:*—W. A. Evans states that every case coming to autopsy shows evidence of bacterial leakage into the peritoneal cavity. Experiments by Wegner, Peiser, and Meisel, and clinical observations by a host of surgeons demonstrate beyond any reasonable doubt that a certain quantity of infection under certain circumstances is tolerated by the peritoneum and disposed of by absorption without any appreciable reaction.

The quantity of infection that may be disposed of in this way is very variable and depends upon a variable array of conditions, viz., an intact peritoneal membrane, the vascular development of the peritoneum, its mobility and elasticity, the extent over which the infection is spread, the rate of the distributive function, the virulence of the infection, the intestinal distention, the bactericidal power of the blood, the power of phagocytosis, the condition of the heart, the capacity of the kidneys; in cumulative language, the local status of the peritoneum, the virulence of the infection, and the status, physical and chemical, of all the tissues and organs of the body as a whole.

It will therefore be plain that the determination of the amount of infection which may be sustained without appreciable reaction can only be estimated in a very general way, if at all. The factors upon which it depends are so numerous and in so many instances impossible to measure.

It is safe to say that one of the reactions of the peritoneum against infection is the absorption of the infectious material, and when that plan reaches a certain maximum an exudation of serum, plasma, leucocytes and blood, takes place into the peritoneal cavity. At times the deposition of fibrin upon the serosa paves the way for the building of adhesions of a temporary or permanent nature.

The exudative reaction of the peritoneum does not differ chemically from that of other structures. On account of the enormous continuous extent of the membrane, the size of the cavity into which the exudate may flow, and the continuous tendency to absorption exhibited by the serosa,

the physical character of the exudate will present marked variations from that usually found in connection with other structures.

The quantity of pus may be very great, several quarts or more, depending upon the space in the abdominal cavity. At times the exudate is more serous in character, and again of a sanguineous nature. The color may be white, yellow, green, yellowish-green, or brown and grayish-brown, depending on the character of the predominating infectious organism. The serosa may be glistening and moist, or it may be covered with fibrin, presenting a grayish dry appearance. In some cases of profound sepsis it is red and dry.

6. *Prognosis*.—Experience in general furnishes a bad prognosis for those cases of peritonitis in which the serosa is dry and red with little or no secretion in the cavity. This particular state is variously explained. Lennander holds the view that absorption has been so rapid and intense as to exceed the rate of exudation, and consequently resulted in an inundation of the system by toxic products. Another explanation lies in the probable absorption of an amount of toxic material sufficient to paralyze the phenomenon of exudation, consequently abolishing the protective function.

No one will deny that the pouring out of a profuse exudate dilutes the toxic fluids and makes for a bacteriolysis, practically outside of the general system. The deposition of fibrin in the serosa, the congestion and stasis in the blood capillaries, and the choking of the lymph channels undoubtedly reduce to a minimum the rate of absorption and thereby tends to save the life of the patient by guarding his system against an overwhelming septic dose.

Lennander from his large experience with peritonitis says that the prognosis is good when the exudate is large. Dubar and Remy noted a small amount of exudate and an absence of fibrinous deposit in fatal cases of infection. Lennander quotes the case of Hultl, a boy aged 5 years, with five liters of pus in the abdomen, finally healed by an operation with drainage.

That the exudate in peritonitis is toxic, and that the degree of toxicity is at times very great, has been conclusively proved by experiment, by clinical observation, and by the accidental infection of the operator. To the rabbit .1 c.c. of the liquid has resulted fatally. Disturbance of the absorptive equilibrium, incident to flushing and traumatizing the peritoneum at the time of operation has resulted in the absorption of a sufficient quantity of the toxic exudate to cause death in a few hours after the procedure, an experience which has also been shared by the writer. This patient was a woman, aged 25 years, who after sustaining a perforation of the uterus incident to the passage of a sound developed a peritonitis. The fifth day after the accident found the patient with a pulse of 90 and a temperature of 1 degree above normal, no particular tenderness in the abdomen, very little distention, some dullness, and constant vomiting and obstipation. At operation the peritoneal cavity contained several pints of a serous exudate. The peritoneum in a part of its extent was covered by a fibrinous exudate, the rest being moist and glistening. It

presented apparently no attempts at adhesion formation. The peritoneum was manipulated considerably in a search for a possible mechanical ileus; some of the fluid was sponged out, and a rubber and gauze drain inserted. The patient recovered from the operative shock but succumbed four hours later with all symptoms of profound sepsis.

That accidental inoculation of the operator's fingers through a scratch or needle puncture has frequently resulted fatally is so well known that it needs no special examples for its proof of existence.

From the evidence at hand it is quite apparent that the exudative function of the peritoneum is a life-saving process, through the fact that it inhibits absorption at a time when the further entrance of toxins and bacteria into the general system would tend to terminate life, also that the exudate dilutes the poisons already generated and that it inhibits bacterial growth and makes for bacteriolysis.

On the other hand the toxic exudate constitutes a grave danger, and especially so in diffuse peritonitis without adhesions. As the peritoneum sheds itself of its fibrinous exudate and as the congestion in its vessels subsides, the absorptive power is re-established, an enormous quantity of septic material suddenly enters the already over-burdened circulation and finishes the tottering patient.

It is the succession of such experiences which has led up to the operative procedure by which the exudate has been removed, or as much of the toxic material as was possible without much disturbance or injury to the peritoneal membrane. By this means the secondary fatal absorption of the toxic exudate, which in the beginning proved a measure of safety to the patient, was prevented.

7. *The Distribution of Toxins and Bacteria:*—Gravitz found that fifteen minutes after the injection of a culture of streptococcus into the peritoneal cavity of a rabbit the germs could be found in the heart, liver, and kidney tissue. Under the conditions that accompany peritonitis in the human subject very few bacteria reach the general blood stream. The toxins enter the hepatic circulation from the peritoneal cavity, pass into the heart through the vena cava, and then into the general blood stream. The complications in peritonitis as reported by Lennander and others are in accord with this assumption. Thrombosis in the portal vein and vena cava, pneumonia and pleuritis, pericarditis, liver atrophy, retro-peritoneal abscess and nephritis are complications in the course of peritonitis which map out quite clearly the route over which the toxic products travelled and left their track of injury and devastation.

8. *The Causes of Death:*—Notwithstanding the numerous features in connection with the various cases of peritonitis but one and only one cause of death exists. Clinical observation amply demonstrates that as long as the toxins remain in the peritoneal cavity the patient's life is in no danger. It is due to the passage of the toxic products into the general circulation that all symptoms arise. The septicemia with its effect upon the tissues and organs is alone responsible for the fatal results. The study of the causes of death from peritonitis practically resolves itself into an investigation and consideration of all the factors which increase

and result in such an acceleration of the absorption of septic products through the peritoneal membrane as to overcome systemic resistance and tolerance.

Experimentally, death occurs when the quantity and virulence of the infection produced has been so great that the amount absorbed previously to the inflammatory reaction of the peritoneum has been sufficient to compromise life. We may term such a condition death from primary absorption.

Peiser's experiment with rabbits, which had previously been infected, and after one hour subjected to flushing of the peritoneal cavity with one liter of salt solution, resulted fatally to the animals that were irrigated, while those not so treated remained alive, surviving the infection. These are examples of death from secondary absorption.

Von Genersich reports experiments conducted on fifty rabbits to ascertain the effect of complete intestinal obstruction. After the ligation of the small intestine, many died the first day. The greatest number succumbed on the second day, and only a few survived to the fourth day. Ligation of the large intestine caused death in from two to eight days. Cultures from the peritoneum and blood of these animals produced numerous colonies of colon bacilli. These are examples of death from continuous infection, the bacilli and toxins passing through the intestinal wall into the peritoneal cavity and from there on into the general circulation: or they may also have passed directly into the blood vessels situated in the intestinal wall.

It is more probable, however, that the bacilli and toxins pass through the intestinal wall into the peritoneal cavity, and from there on into blood and lymph vessels, and that this process is dependent upon the thickness of the intestinal wall.

It may be very interesting to note that after performing the same experiment, that of artificially obstructing the lumen of the gut, on dogs and ducks—animals possessing a very thick walled intestine—Generich came to the conclusion that in those animals the intestine may be ligated without a fatal result, without even causing a peritonitis, providing the tension of the ligature is such that it cuts through the wall of the gut within four days. An examination of these animals conducted two or three weeks after the ligation operation, revealed that the intestinal lumen was re-established with only a slight degree of scar tissue contraction at the site of the former ligature. These experimental results foreshadow the evil effects of a paralytic ileus in connection with peritonitis, and especially point out the danger of the ensuing intestinal distention which invariably accompanies it.

Peiser also found that some of his animals, surviving the primary infection, succumbed later, after two or three weeks, to such affections as large abscesses behind the peritoneum, abscesses in the kidneys, liver, and other organs. These are examples of death from complications resulting from the arrest of bacteria distant to the source of primary infection.

The above described conditions cause death in at least two distinct ways, depending largely upon their location. A large abscess situated

in a comparatively unimportant region may result fatally from the continuous absorption of its toxic products, death from chronic septico-pyemia. An abscess or multiple abscess formation involving important organs may cause death by sufficient interfering with or destroying their function, and this occurs especially rapidly when one of the vital organs is involved.

9. *The Clinical Considerations*.—The conditions which underlie the causes of peritonitis in the human subject practically preclude death from primary acute absorption. It is questionable that even the bursting of a large abscess or the sudden discharge of bowel contents from sudden rupture of the gut, would prove fatal from the amount of toxic material absorbed during the first hour or so. By far the vast majority of peritonitis cases result fatally from what experimentally is called secondary absorption, and which corresponds clinically to toxic absorption after the period of peritoneal reaction.

Many deaths follow continuous infection as occasioned by intestinal obstruction and the continuous leakage of infectious material into the peritoneal cavity from a ruptured viscus or intra-abdominal abscess. Secondary absorption and continuous infection not infrequently coexist, and under such conditions death occurs very rapidly with all the signs of profound and acute sepsis. That most of the cases presenting the type, diffuse peritonitis, die in the absence of operative treatment from secondary absorption, from continuous infection, or from a combination of the two conditions, no one who has clinically observed this variety of disease can conscientiously deny.

While the exact percentage of death rate is impossible to determine for obvious reasons, the fact remains that a large number result fatally in the absence of surgical treatment and some authors, from their observation, place the death rate for diffuse septic peritonitis as varying between 90 and 100 per cent. when permitted to run its course without intervention.

A colossal heap of fatal surgical results, from such procedures as evagination, breaking up of plastic adhesions, mopping out all the pus, and flushing of the peritoneal cavity with salt solution, testifies mutely to the baneful results accomplished through the disturbance of the absorptive equilibrium. Trendelenburg, washing out and draining the peritoneal cavity, admits a mortality of 60 per cent. in the treatment of peritonitis.

The literature presents the reports of the autopsy on many cases demonstrating the fatal effects of continuous infection from a perforation of the intestine, through which septic material continuously entered the peritoneal cavity. Lennander, Greenough, Barth, and others, state that cases in their experience, presenting continuous intestinal distention in connection with obstruction, paralytic or otherwise, generally proved fatal in a few days after the establishment of the condition. The great danger of continued intestinal distention has been experienced clinically, demonstrated experimentally, and is negatively supported by the prompt results after relieving the distention by means of a so formidable procedure as an enterostomy. Greenough reports immediate relief of symptoms after

opening the large intestine and permitting the gas and liquid contents to escape through a flanged glass tube. Booth saved eight out of eleven cases which were apparently moribund by relieving the intestinal distention through an enterostomy, the relief in symptoms being immediate.

Examples of death from the complications associated with peritonitis are so common that the perusal of almost any series of fatal cases will reveal a number of them. Death may be delayed after a diffuse peritonitis which cleared up completely after operation, death occurring from an extensive purulent cellulitis behind the peritoneum involving the cellular tissue in the mesentery. Ross reports a case of diffuse peritonitis operated on and apparently doing well but which died on the sixteenth day after operation from broncho-pneumonia. The autopsy revealed a large abscess between the liver and diaphragm which had ruptured into the right pleural cavity and lung. This report and many others of a similar nature are very interesting and highly important from a pathologic and therapeutic standpoint, as they apparently demonstrate that a diffuse peritonitis which at operation shows no effort towards the formation of plastic adhesions may subsequently circumscribe a portion of its infection and give rise to an intra-peritoneal abscess. This pus-filled cavity constitutes a complication which has often been responsible for a fatal issue.

The complication termed septic thrombophlebitis represents an invasion of the circulation apparatus with the special danger of multiple metastatic abscess formation and consequently has an enormous fatality with therapeutic measures very much at a disadvantage.

10. *Suggestions for Treatment*.—The study and consideration of the various features concerned in the inception, course, and termination of acute suppurative peritonitis will furnish at least some hints by which treatment may be conducted more rationally and a lower mortality confidently expected.

The expectant treatment has an appalling mortality and cannot be considered either rational or humane despite the fact of an occasional recovery. The practice of extensive manipulation in the abdominal cavity and the flushing out of it with antiseptic and irritating solutions is followed by a high mortality and should be discontinued. The removal of fluid from the peritoneal cavity should be accomplished as gently as possible by means of wet sponges or a suction apparatus to avoid injuring the serous membrane. Eventration should not be practiced except as a necessary measure to locate an intestinal perforation. Fibrinous adhesions should not be broken up, nor should extensive exploration be made into the free portion of the cavity. The time of operation must be reduced to minutes and not continued over hours. The pus from an abscess cavity must have free drainage to the outside, and perforation of hollow viscera must either be closed or tamponed and packed in such a way as to lead the material issuing from them to the outside, thus protecting the general peritoneal cavity. The abdomen must be opened to relieve the

intra-peritoneal tension as pus under pressure is absorbed at a greater rate. Pus in the free cavity may be allowed to flow out and this is much safer than to attempt to wipe it out.

Drainage through the incision should be provided either by means of glass or rubber tubes or by means of a cigarette drain. Intestinal distention should receive constant attention first, last and all the time. Should the different enemas and cathartics fail to relieve the condition, an enterostomy will be justifiable. Careful search should be made from day to day, for pus collections distant from the source of infection. When found, they should be evacuated.

Salt solution should be continuously employed, preferably per rectum, by the gravity method, or if this proves insufficient the salt solution may be injected subcutaneously or even intravenously. This procedure increases elimination, dilutes the circulation, and increases the intravascular tension. The Fowler position is of undoubted benefit and may be employed as soon as the patient leaves the operating room: a syncope from this cause need not be feared.

Fluids accumulating in the stomach should be removed by the stomach tube, after which the stomach should be washed out. This procedure frequently relieves the distressing retching. Drugs should be used only when demanded by specific symptoms in connection with the vital organs and morphin must certainly be employed with great caution.

103 State Street.

APPARATUS FOR IMPROVED ETHER ANESTHESIA *

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I wish to present and describe the latest form of an anesthesia apparatus which I have been developing for the last four years. An earlier form thereof was presented at the meeting of the American Medical Association in this city during June, 1908, and my paper was published shortly thereafter in the *Journal of A. M. A.*¹ By comparing the illustration therein contained with the present device (Fig. 1) several changes may be noted. I at that time employed a foot bellows to supply the air current required, and a compression bulb to counteract the intermitting quality of the air current supplied by the bellows. In the place of these I have substituted the less expensive and more simple Politzer air bag, of the six-ounce size, provided with an inlet valve in the bag, and have additionally supplied a similar valve in the tube leading therefrom to the anesthetic bottle, in order to prevent any rearward motion of the air, while the hand bag is being expanded. In this way the air current supplied is intermitting instead of constant, and its motion is timed with the patient's inspirations.

* Presented at a meeting of the Chicago Laryngological and Otological Society, March, 22, 1910.

1. Jour. Amer. Med. Assn., June 20, 1908.

The device is based upon the principle of the Junker inhaler, which was originally designed for chloroform only. As modified it is adapted for the employment of ether. The second or mixing bottle, as suggested by Brophy, prevents the passing to the patient of the fluid anesthetic, as might otherwise occur should the ether bottle be too nearly filled, or should too much force be employed in the supply of air. While the capacity of this bottle is ten ounces I find it best to have it not more than two-thirds filled with the ether. My custom is to have the patient first anesthetized with the mask in the usual manner; when a change is made to the inhaler as the operation is begun. I have selected ether as

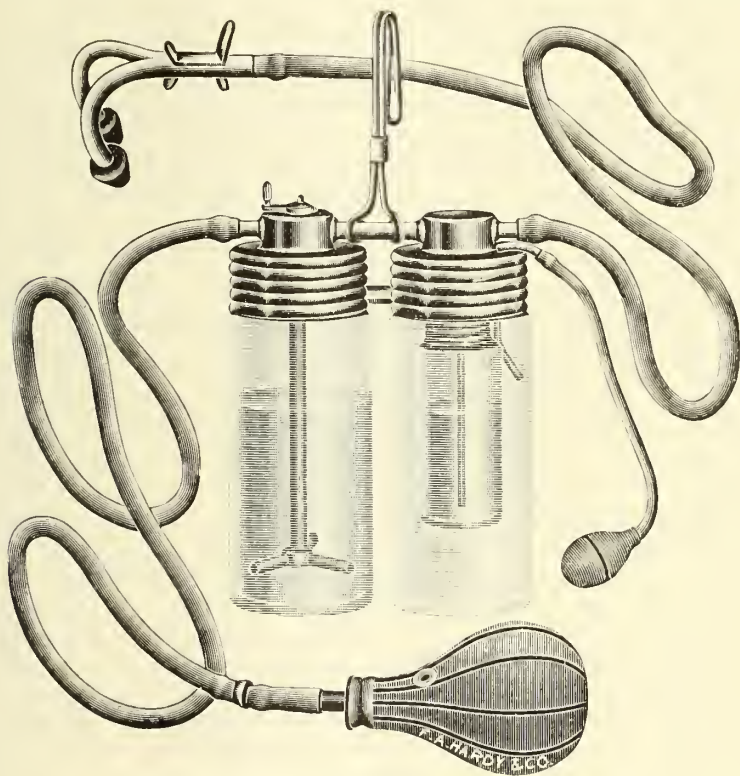


Fig. 1.—Ether Anesthesia Apparatus ($\frac{1}{3}$ size).

an anesthetic, it being the safest and most convenient to employ in the class of cases for which the described method was designed, being patients semi-asphyxiated from defective respiration, whereby the blood has been overladen with carbon dioxid, and underoxygenated for possibly several years, thereby increasing both the difficulty and the danger of the anesthesia.

In order to assure the safety of all anesthetics oxygen in some form is required. In the case of prolonged nitrous oxid anesthesia, air, for different reasons, cannot be employed, and oxygen gas is of necessity selected. With ether and chloroform a sufficient amount of oxygen can

at all times be secured from the inhaled air, the only requirement being that a lethal dosage of the anesthetic vapor be avoided. When these agents are given from a mask an undesirable amount of the vapor may at any time be unintentionally administered, particularly in the case of chloroform, the vapor of which accumulates through the patient's "holding the breath" until a very dense vapor is inhaled. In the writer's opinion this explains the chief cause of fatalities occurring at the beginning of chloroform anesthesia, the dense vapor being absorbed and carried directly to the heart by the pulmonary veins so as to cause cardiac failure. In fact this is probably the chief, if not only way, in which circulatory disturbance precedes respiratory failure during anesthesia. This theory was advanced by the writer several years ago.²

The bottles are of large size and different shape from those I formerly employed, and are supplied with a specially made screw-cap with dome elevation to better permit of the application of the proper connections. As will be seen the bottles are of the wide mouth variety and a style was selected with a liberal and prominent screw thread. The air tube in the ether bottle terminates in a three-pointed extension, so as to divide up the entering air, and cause its better exposure to the ether. By operating the lever on the top of the ether bottle, which swings 180 degrees, the passing air current may be more or less subject to the effect of the ether as required. In this way by proper attention to the circulation and respiration the correct degree of anesthesia can easily be maintained. Furthermore interrupted administration, which is one of the chief disadvantages of mask during surgical work in the mouth or throat, is avoided, as well as the feature of rebreathing, which is so generally associated with the use of the cone or mask. Additionally the anesthetist is at no time in the way of the operator.

In the second bottle, which was formerly employed as only a safety or mixing chamber, I have been enabled, owing to the wide mouth, to introduce a smaller metal screw cap bottle for the use of chloroform, which can thus be added to the etherized air current if at any time required. By slightly compressing the small connecting rubber ball, the air above the chloroform is condensed so as to force outward into the larger bottle a few drops thereof through the escape tube. At all other times the etherized air passes about this bottle without absorption of the chloroform. From the mixing bottle a rubber tube leads to the patient which is supplied with a Y-shaped tip, with conical hard rubber plugs, so as to tightly fit into the patient's anterior nares. In order to meet the requirements of different ages, from infancy to maturity, I have found that four sizes of these tips are required.³

Cold is produced by ether at the time of its evaporation, or transition from fluid to vapor and one of the disadvantages of the mask comes through such chilling of the air inhaled, and as at this time mouth breathing is chiefly employed, the lungs are exposed to very cold air, which is additionally not humidified as should be. In this way post-operative bronchitis or pneumonia are often caused. With this device the

2. The Medical Monograph, February, 1899.

3. The Jour. of Ophth. and Oto-Laryn., January, 1909.

evaporation occurs in the anesthetic bottle, some distance from the patient, who thus escapes the exposure to cold, for by the time the etherized air reaches the nose the frigidity is materially reduced. Furthermore, as all of the etherized air is compelled to pass through the nose, it is both warmed and humified by the physiologic action thereof, before reaching the lungs.

In order to care for the increased salivation, caused by the ether, and also for the hemorrhage incidental to the operation, aspiration is employed. In this way the operative field is not only kept fully exposed but there is also avoided the danger of respiratory arrest from the entrance of

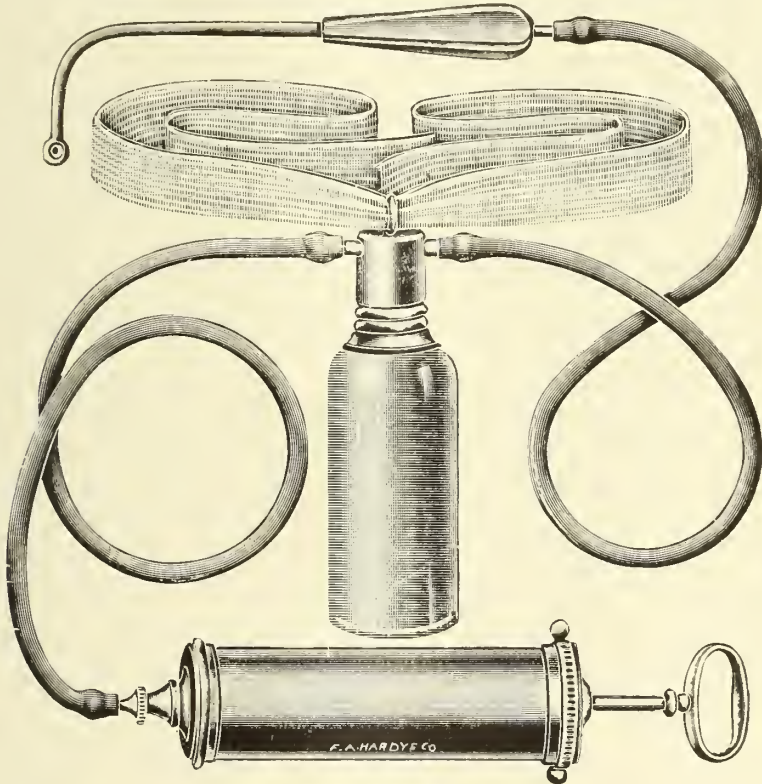


Fig. 2.—Blood Aspirator ($\frac{1}{2}$ size).

fluids into the lung tubes, and therefore the further danger of aspiration pneumonia. Furthermore, as the passage of ether-saturated fluids to the stomach is prevented, the danger of post-operative vomiting is diminished. As a further assistance in the avoidance of vomiting I have found a two day's course of preparation to be of great value, and I furnish the patient with a printed sheet of directions regarding the same. When these directions have been accurately followed no vomiting has been observed.

In the aspiration device the same style of bottle is used as is employed in the inhaler (Fig. 2). Being wide-mouthed the blood is easily

emptied. With the smaller necked bottle formerly employed some trouble was experienced, as marked coagulation of the blood is caused by its being so churned with the air exhaust.

A fourth or reserve bottle goes with the set to supply the loss in event of an accident breakage. The extra space it requires in the hand bag is of no disadvantage as, being wide mouthed, it serves as a container for any small instruments or pieces carried. It is also provided with a screw cap and extra rubber washer.

The aspiration device is supported from the neck of the assistant by a tape, who, while holding down the tongue with a depressor in his left hand, after the mouth gag has been adjusted, has in his right hand the aspiration tip, and from time to time, as required, enters it in the back part of the patient's mouth for the withdrawal of fluids, a nurse meantime operating the suction pump. A quick beginning, followed by a strong, steady pull, gives the best results. In this way blood and saliva are carried to the receiving bottle, which should be emptied, providing it becomes more than two-thirds filled. For lubricating the piston of the air-pump I have found that a mixture of equal parts of glycerin and water is better than oil, as it does not dry out so quickly. M'Meehan, of Cincinnati, has recently written of the use of this aspirator in general surgical work, and has particularly mentioned its value for the removal of regurgitated fluid from the mouth, which so frequently occurs during intestinal obstruction.⁴

As compared with the earlier pattern some changes have been made in the aspiration tip, the point of which has been surrounded with a cage of perforated metal, while at its end there is provided a large conical opening for small blood clots, of similar shape to those formerly employed. Care is taken that there is no reduction in calibre at any point in the connections or tube leading to the receiving bottle. With this change is avoided the former tendency of the uvula to be drawn into one of the two holes with which the tip was provided, while the many holes in the perforated metal insure against stoppage by tissue shreds or blood coagula. Furthermore, with the present form the cage end can be easily unscrewed and removed for cleaning.

During the entire operation for the removal of both tonsils and adenoids the patient is in the Rose position, being therefore in the same relative position to the operator as during routine office work, which gives an advantage, as through changes in position the landmarks may become confused. Furthermore, as the larynx is thus elevated above the plane of the pharynx, blood collecting about the entrance to the post-nasal space can be easily removed, and therefore the tendency for it to be either drawn into the lung tubes or swallowed is greatly reduced. Lastly the intermitting passage of etherized air through the nose tends to prevent the retention of blood in the postnasal space. These two devices, as described, have been made for me by F. A. Hardy & Co., of Chicago.

103 State Street.

4. The Lancet-Clinic, Jan. 29, 1910.

SCOPE AND CHARACTER OF THE NEXT UNITED STATES
PHARMACOPEIA *

W. A. PUCKNER

Secretary Council on Pharmacy and Chemistry, A. M. A.

CHICAGO

Ever since the eighth revision of the United States Pharmacopeia made its appearance in 1905 the individual physician and medical organizations, and the individual pharmacist and pharmaceutical societies have discussed what the ninth revision should be. With the appointment of the Committee of Revision it may be said that the skirmishing is at an end, and that the interested parties are in alignment to decide the scope and character of the ninth revision of the book. It would seem opportune at this time to present to the medical profession a brief statement as to what, from the standpoint of the retail pharmacist, the ninth revision of the Pharmacopeia should be.

In the main, two conditions have brought about a difference of opinion between the physician and the pharmacist. Physicians, particularly those who are interested in the advance of rational therapeutics, desire that the remedies contained in the Pharmacopeia be such that they may limit their prescribing to the articles contained in the book, and that inclusion in the Pharmacopeia shall, in a measure at least, indicate therapeutic value. So also, teachers of materia medica and therapeutics desire that the scope of the Pharmacopeia be such that they may use it as a text and so insure its use by the graduate physician. The pharmacist, on the other hand, particularly since the enactment of the Pure Food and Drugs Act, desires that the Pharmacopeia shall protect the public as well as himself, and that it shall be a book of standards which he may safely follow. He desires that the scope of the book and the subject matter shall be such as to enable him to determine and guarantee the good quality of the largest possible number of drugs. In order that physicians may be conversant with the wants and needs of pharmacists a brief outline of some of the principles which the pharmaceutical profession desires shall govern in the revision of the Pharmacopeia are presented.

The pharmacist holds that any remedy which is in general use as a remedial agent should, unless otherwise objectionable, be admitted to the Pharmacopeia, and that admission to or deletion from the Pharmacopeia should not be considered as an indication of the therapeutic value of the drug.

Since, through the enactment of the Pure Food and Drugs Act, the Pharmacopeia has become more directly a legal standard, those whose function it is to determine the quality of drugs desire that the language of the Pharmacopeia should be plain and unmistakable. In line with this, it is demanded that the next revision be compiled with much greater care than was the last. The following are some of the more specific suggestions for the improvement of the book along these lines:

* Read at the meeting of the Chicago Medical Society, May 25, 1910.

Besides specifying the objectionable impurities, the present Pharmacopeia contains a statement of the amount of real substance which should be contained in a given article. Thus, for Epsom salt, besides excluding objectionable impurities such as metallic salts, arsenic, etc., the Pharmacopeia directs that this salt should contain 99.7 per cent. of real magnesium sulphate. Pharmacists have found this so-called "purity rubric" of great value and desire it to be continued and extended. The descriptions of many crude drugs need careful revision so as to provide means of insuring a high grade drug. As to-day many vegetable drugs reach the pharmacist in a comminuted or powdered form, it is necessary that the official description provide means for the recognition of the drug in such condition. That is, while formerly it was sufficient if the external characteristics of the plant yielding the drug were described, such description is insufficient to-day. It is now necessary that the microscopic characteristics of many drugs be carefully described. Methods of chemical assay of drugs, such as the determination of morphin content in opium, have proved eminently satisfactory and the pharmacist desires that, whenever possible, chemical methods of assay be given for each drug. Experience has shown that in many cases the active constituents of a plant are confined to certain tissues. In view of this, it is now fully appreciated that a custom, sometimes followed in the past, of grinding a drug and then separating a portion thereof by means of sieves, to be sold as powdered drug while the part remaining on the sieve might be sold for other purposes, is incorrect as it is possible that the fine portion may or may not contain the active medicinal ingredients of the drug. Therefore, it is desirable that in the next Pharmacopeia definite directions for the powdering of drugs be given and a limit of residue for rejection be stated. In the present Pharmacopeia no description of the finished products, such as fluidextracts, tinctures, etc., is given when methods for their preparation are provided. In view of the changing conditions in retail pharmacy it is desired that standards for such galenical preparations be provided wherever possible.

Considerable difference of opinion has been expressed whether the Pharmacopeia should simply indicate the degree of purity required for a given drug or whether also the method whereby this purity may be determined shall be included. A large majority, I believe, desire that the Pharmacopeia shall include definite and precise descriptions of the methods to be used in the examination of drugs. Since this will add materially to the size of the book, the opinion has been quite generally expressed that such methods for the determination of physical and chemical constants be placed in an appendix to the Pharmacopeia. If this plan be favorably considered by the Revision Committee it will probably be feasible to make arrangements so that physicians could buy copies of the book without the appendix. Many products, besides being used as medicines, are also used for technical purposes. In order that the pharmacist may not be required to dispense the costly official hydrochloric acid when the acid is required for technical use only, it is desirable that the Pharmacopeia should point out very plainly that its standards are to be applied only when the articles designated are to be used as medicines.

The pharmacist is most anxious that, besides the doses now included in the Pharmacopeia, also the maximum single and the maximum daily dose of potent remedies be given. From the standpoint of the pharmacist, such statement of maximum doses is desirable. It will enable the pharmacist to consult physicians when large doses of drugs are given without fear of giving offense. At the present time the pharmacist often is in a quandary when large doses are prescribed. If his estimate be correct that the dose is excessive, dispensing of the prescription may endanger the life of the patient, while consultation with the physician often entails the animosity of the latter, even if the pharmacist were correct in his belief that an excessive dose had been prescribed. Inclusion of such maximum doses is very much to be desired if the medical profession can see its way clear towards the formulation of doses which physicians may not exceed unless they be indicated by a characteristic sign.

The pharmacist believes that the chemical nomenclature of the Pharmacopeia is, in a general way, satisfactory and that great conservatism should be used in modification of names. He believes that the names of synthetics should be abbreviations of their true chemical names and that they should be short and euphonious. Under the wording of the Pure Food and Drugs Act the pharmacopeial standards apply to an article only when the article is sold under its pharmacopeial title. There being a tendency to sell drugs under unofficial, but nevertheless well known titles, so as to escape the provisions of the law, it is desirable that the list of synonyms in the Pharmacopeia be extended, that is, for instance, that thorn-apple be given as a synonym for stramonium.

It having been shown that some drugs and pharmaceutical preparations rapidly deteriorate, it is desired that the next Pharmacopeia give directions for the proper keeping of drugs and that it establish a time limit for drugs which are prone to deteriorate. The need of such a time limit has been shown for the fluidextracts of coca, aconite root and physostigma, for the solid extract of physostigma, and particularly for preparations of the suprarenal gland.

Because of the great harm which may be done through lack of precautions in the sterilization of certain prescriptions, it is recommended that a chapter on sterilization be included in the next Pharmacopeia. This chapter shall give directions for the particular methods of sterilization adapted to the various classes of preparations.

A very large majority of the pharmacists are satisfied that metric weights should continue to be used in the Pharmacopeia to the exclusion of the old system, and exception to be made only in the statement of doses which it is believed should continue to be given in the old, as well as in the metric system.

From this it appears that pharmacists want an extended Pharmacopeia since they believe that they can guarantee the purity and quality of drugs only if such drugs are recognized by the Pharmacopeia and their purity and quality described. Physicians, on the other hand, want a

book which they may use, and therefore desire it limited to articles of therapeutic value. They believe that the federal authorities are quite able to control the quality of drugs whether such drugs are described in the Pharmacopeia or not.

DYSMENORRHEA *

J. E. D. SILCOX, M.D.

RIO, ILL.

Mr. President and Gentlemen: In selecting dysmenorrhea as the subject for my paper this evening I thought it would be of interest, since the condition is so commonly met with in general practice, and is one about the etiology and pathology of which there is such a diversity of opinion. I thought that by discussing it from an entirely practical standpoint you might gain something of value. The direct causation of the pain is, I believe, due to the following factors: 1. Hyperesthesia and spasm of the internal os uteri. 2. Clot formation within the uterine cavity. 3. Uterine contractions. I will try and show you that these conditions are always present in those women who suffer during menstruation, and demonstrate that the conditions found on examination, whether intra- or extrauterine, cause dysmenorrhea by increasing one or all of these factors. The diagnosis is ordinarily easy, yet many mistakes have been made, and it is to be remembered that the congestion present just before or during menstruation often causes pain in an adherent appendix. Urethral caruncle, hemorrhoids, cystitis—the pain of which may closely resemble dysmenorrhea—abortions, miscarriages, dermoids and extrauterine pregnancy are conditions at times responsible for error in diagnosis: the latter after rupture, when we have colicky pains and discharge of clots, is so like dysmenorrhea that it could easily mislead the hasty observer. My remarks are especially confined to the pains related closely to the uterus and its appendages and do not relate to the many reflex symptoms so common during the menstrual flow, such as headache, backache, irregular heart and kidney action, dysuria, hot flashes, hysteria, etc. The pain is almost invariably intermittent, and when it is described as being continuous, I believe it is due to the uterine contractions overlapping, giving a sensation of a continuous spasm. Its location is usually central, at times over one or both ovaries, shooting down the inside of the thighs or out onto the iliac crest. It is variously described as labor-like, as colicky, bearing down or dragging; some say it is stabbing, boring or neuralgic; the colored women describe it as they do pain elsewhere as “misery.” The past history will help us in determining whether or not the pain is dysmenorrhea, not only as to the menstrual suffering, but the patient’s general history, especial attention being given to scarlet fever, malaria, rheumatism, heart-diseases, phthisis, gonorrhea, and syphilis, all of which are indirect causes of menstrual discomforts. The subject is so divided as to make six types of dysmenorrhea, but at

* Read before the Knox County Medical Society, Galesburg, Ill., April 21, 1910.

this classification is not satisfactory, and to present to you a more plausible explanation of the condition is the purpose of my paper. The divisions are: 1. inflammatory; 2. spasmodic; 3. neuralgic; 4. mechanical or obstructive; 5. membranous, and 6. ovarian. These are not only confusing but open to serious objections. 1. The inflammatory type confines us to those cases in which there is some inflammatory condition of the uterus or its appendages and does not explain why some of these patients feel better while menstruating than between their periods. As a rule the women who would be placed in this class suffer most several days previous to the flow from an increase of blood to organs already inflamed. Inflammation in no way accounts for the colicky intermittent pain just before or during the flow after the subsidence of the backache and heavy feeling in the pelvis. Again there are many women with even pyosalpinx and ovarian abscess, who do not have the slightest pain while menstruating. 2. The spasmodic theory implies that the pain is due to the uterine contractions alone, and those advancing the theory confess that these cases may suffer from attacks of pain independent of menstruation, which pain could hardly be classed dysmenorrheal. Granting that there may be a spasmodic type it is hard to understand why all women do not have dysmenorrhea, as the contractions, I believe, are always present. 3. The class of cases coming under the head of neuralgic dysmenorrhea are those in women who suffer from rheumatism, gout, or malaria. Usually anemic, of a highly susceptible nervous temperament and often hysterical, the fact that some of these patients, though by no means all have painful menstruations does not, to my mind, explain the direct cause of their suffering. 4. The mechanical or obstructive theory is especially applied to cases in which, from some congenital defect or acquired condition, as atresia or flexion, the menstrual secretion is impeded. When we stop to think that about five or six ounces of blood are lost at each menstrual period, and taking five days as an average duration with only one drop of blood escaping every three minutes, it is hard to see how there could be much suffering in a canal which is at least three-sixteenths of an inch in diameter, unless there is at some point in this canal a spot that is hyperesthetic to pressure. There are many women with cervical stenosis, interstitial fibroids, extreme flexions, etc., who have menorrhagia or metrorrhagia, and yet who do not suffer, although the cervical canal will admit only the finest probe. 5. The membranous theory does not account for those cases in which membranes are passed without pain nor why there is suffering only at intervals of two, three or four periods. 6. What I have already said in regard to the inflammatory type may be applied to the ovarian: i. e., that many women who have ovarian trouble do not have painful menstruation. Allow me to repeat that the theories ascribing painful menstruation, to inflammation, spasm of the uterus, neuralgia, mechanical obstruction, passage of membranes, or ovarian diseases, and, as I have already said, uterine contractions alone will not account for the pain as they occur when it is not present. To determine definitely the etiology of dysmenorrhea it is necessary to collect the data of past experience, and with that to begin a

new series of deductions which will point to causes that can be shown to be always operative. It is well known that in a certain number of cases in which a sound is passed there is marked pain; sometimes, in fact, the pain is so severe that the sound can only be passed while the patient is under the influence of an anesthetic, and without such an aid even a fine probe could be passed with difficulty. This is obviously due to a temporary contraction, caused by an introduction of a foreign body or the sensitive fibers of the internal os, which is the smallest and most sensitive spot in the uterine canal and is surrounded by a circular band of muscular fibers forming a so-called sphincter. Increase the sensitiveness of this normally sensitive point and a spasm occurs when it is irritated. It is evident then that pain may be caused by a spasm of the internal os. It is a fact moreover that the passage of a sound has cured patients suffering from dysmenorrhea. It is only reasonable to suppose that in such cases the pain (since pain can be so caused) was due to spasm of the internal os, not due to mechanical obstruction, as many women whose cervical canals present such obstruction do not suffer pain. In so far as an obstruction causes retention of blood, and therefore favors clotting, does it seem to be a factor in dysmenorrhea. If we have clots of blood in the uterine cavity which eventually have to be passed, we can readily see how the hyperesthetic os, which is normally only about three-sixteenths of an inch in diameter, may be thrown into a spasm and cause pain. As a matter of fact most, if not all, women who suffer during menstruation pass clots at this time. Patients will tell you that pain brings clots away. Any foreign body in the uterus will cause it to contract. During pregnancy we have, after three months, the Braxton-Hicks sign; a fibroid especially in the uterine wall will cause contractions, as will intrauterine injections and applications or any object such as a small bit of cotton tampon, etc. It seems only natural to infer that the retained menstrual blood, especially when clotted, will give rise to contractions, which cause the intermittent pain like that occurring in dysmenorrhea. I have questioned 100 women who have suffered during menstruation and 97 of these said clots pass during this time; some of them are very small and it seems possible that at times the acid secretions from the vagina may dissolve the clots which come from the uterine cavity, as it is well known that blood taken as it appears at the internal os will coagulate as any blood taken from any other part of the body, but the menstrual blood, as ordinarily seen, does not do so on account of its admixture with the acid secretions of the vagina. The women's general condition has at times close relation to their suffering. They frequently tell you that they suffer more when they are run down, overworked, nervous, or worried. I have had the opportunity of watching several patients who passed membranes when menstruating and they had pain only when their general health was poor. As a rule these pieces of membrane, some as large as half a dollar, were passed without the slightest inconvenience. This form of dysmenorrhea is the most rebellious to treatment and frequently the only assured cure we can offer these women is the menopause or ovariectomy. In regard to treatment the patient's general condition should receive its full share, as I feel con-

fident that I have seen the menstrual suffering, if not entirely cured at least much lessened by the building up of the general rundown system. Should she be anemic, iron and the syrup of hypophosphites seem to be very satisfactory with my patients. Bland's pills, five grains each, with one-tenth grain of extract nux vomica, three to six pills daily can usually be relied upon. The salicylates and quinin seem, at times, to act beneficially but to what extent I am unable to say, as the relief from pain was as great in these women who had not rheumatic or malarial diathesis as in those who had. The bowels should be carefully looked after, the salines perhaps acting better as they seem to relieve the congestion which is present, quicker than other laxatives. One important part of the treatment is rest; I mean rest in bed two or three days previous to the expected flow, also during this time. Vaginal injection of hot water at 100° to 110° F. will of itself at times lessen the suffering. Used twice daily up to the day previous to the expected flow and recommenced a few days after the flow has ceased, this will be found of the greatest benefit. The failure in some cases to procure any relief from hot douches—and this applies to all vaginal injections no matter what the indications may be—is due to the women not knowing how to use them properly. They should always use a bulb syringe with a nozzle made of horn or some other non-conductor of heat, although a metal tip may be covered with a piece of indiarubber tubing, and inject at least two quarts with or without medication. These injections should always be taken while lying down, which is awkward for a women to do herself and is one reason why they sit over a basin or commode, and why many are not benefited by douches. They should always be given by some one other than the patient. A fountain does little more than bathe the vagina in a puddle of warm water, especially if the patient is upright and what we want more is the relief of the congestion in the pelvic vessels, which is produced much more quickly by the impulse of the jet of water from a bulb syringe, which excites the vessels to contraction. At times women will complain of weight and discomfort in the pelvis after these douches. In these cases by reducing the temperature to about 95° F. they can be well borne. When there is much congestion present in the pelvis and whenever we find tenderness the application of iodine, first removing the mucus by means of forceps dressed with cotton and followed by introduction of glycerin tampons, will benefit greatly. These applications should be made twice weekly so long as marked tenderness exists as ascertained by the finger. The bromids will help many of these cases used between the periods in small doses and then increase the dose two or three days previous to the flow. In patients in whom there is intense suffering with scanty or suppressed flow, usually seen in young girls, the same treatment may be used as aborting a coryza.

Morphin should not be used unless absolutely necessary, and then only hypodermically, and it should always be given by a physician. The acceptance of this theory will demonstrate at once when general treatment fails that the proper procedure is a dilatation of the cervical canal; one in which the internal os is not only stretched, but some of its circular fibers torn, a procedure much like that carried out for fissure of the

anus. It may be just possible that a fissure may exist at the internal os uteri in some of these women suffering from dysmenorrhea. It is natural to suppose that the benefits derived, are brought about by relief of spasm at the internal os, which allows a free escape of blood, thereby preventing clot formation, which lessens uterine contractions. I do not wish it to be understood that I advise dilatation in all cases of dysmenorrhea, but the gratifying results obtained in selected cases make it a procedure of much value; by selected cases I mean those in which there is no acute tubal or ovarian diseases, or chronic pelvic trouble in which we find much tenderness on vaginal examination or lacerated cervix. Now the failure to procure relief after dilatation is in many cases due to the fact that the dilatation is not carried far enough. In virgins and in those cases of rigid pinhole os it should be at least three-quarters of an inch and in parous women one and one-quarter inches. This may seem extreme to some, yet experience in my own cases and the results obtained by others have convinced me of its safety and efficiency. If the dilatation is done under an anesthetic, extra care as to cleanliness may be taken. The operation may be done quickly, taking ten to fifteen minutes to reach this dilatation, using only the pressure of one hand. The dilator may be allowed to remain in the canal ten to fifteen minutes or longer, so that there need be little fear of harm, although at times shock will follow even the slightest dilatations of the extrauterine canal. The best time for dilatation is about one week after the menstrual period, the woman remaining in bed at least five days or, should there be pelvic pain, until this has subsided. Finally when all other remedies fail and the woman is unable to stand the monthly sufferings, the question of ovariectomy must be carefully considered.

THE COMPENSATION FEATURE OF THE "PLAN" OF THE EMPLOYERS' LIABILITY COMMISSION

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A study of the situation developed at the recent public sessions of the Illinois Employers' Liability Commission justifies the fear that, if the commission attaches at the present time a compensation feature to its employers' liability law, one of three things will happen: (1) the feature will swamp the law; (2) it will be eliminated by the legislature; (3) it will be so emasculated in committee as to lose all force and identity by the time it becomes any part of the statute.

To certain timely, yet radical features necessary to the thorough-going liability law already long overdue, there can be little reasonable public opposition—any obstacles will have to be manipulated surreptitiously within the legislative committee room. But a compulsory or even optional scheme of compensation for industrial injuries, the hint toward which was added to Governor Deneen's instruction to prepare a law modifying

the defenses against liability for negligence, is a different project, not ripe and easily blighted.

Strangely enough, although the proposed plan calls upon the employer to concede much and yields him scant return, the warmest support of the compensation feature at the public conferences came from employers, the bitterest opposition from the Chicago Federation of Labor. As to the reason for this unexpected support from the employer, there is more to say anon. For the opposition from local labor groups, the legal indirection and ambiguity both in method and wording of the plan seem chiefly responsible if we leave out of consideration a certain natural bumptiousness characterizing the occasional representative of labor—and measurably justify those who voice the sentiments of workers in suspecting that, in labyrinthine phrases, their constituents are to be “traded out of their legal rights.” A close study of the plan does not clear up the suspicion that the ambiguity is not unintentional. For, shorn of those features which should be isolated in no uncertain terms within a liability act, the proposed legal groundwork for the schedule of compensation is a curiously unconvincing although speciously worded mixture, reflecting hasty compromise between none too harmonious elements within the commission.

To encourage acceptance of the plan—an optional one, “compulsory in form but elective in fact,” whatever that means—certain supposed advantages are proffered to the master on the one hand and to the servant on the other, conditional on acceptance of the prescribed terms. Thus the whilom antagonists are to voluntarily eat together out of the hands of the commission, without too close scrutiny of the process by which they have bargained each other out of their traditional rights. Assuming both parties to this altruistic bartering to be blind to their obvious interests, we still may fairly ask, by what legislative power can the right to recognize defenses be exchanged for concessions, the acceptance of which is optional with a second party? It may be conceded to be good law to declare any pleading invalid which is against public policy; on such grounds the state can rightly go back to first principles by enacting a limit to the employer's judge-made defenses for negligence. But to make the validity of such defenses conditional on an attitude of one or the other party toward a prescribed process of settlement is a form of legislative *double entendre* hardly likely to find favor in constitutional courts. In a word, measures of such widely different intent as those affecting liability for injuries and a schedule of rates for their compensation can hardly be played against each other and cannot be brought safely within the compass of any one act. During the short life allowed it under the creating order, the commission can show a practical opportunism best by elaborating a bill to modify, in the most equitable manner possible, the common-law liability defenses of the employer. No one questions the constitutional right of our legislature to enact such a measure, and—we have the word of John Fitzpatrick* for it—labor will keep after that elusive body “until such a law is enacted for Illinois if it takes twenty years.”

*President Chicago Federation of Labor.

The Illinois plan provides for voluntary compensation, "regardless of negligence or fault," thus waiving the employers' present common-law defenses. But if he refuses to compensate, he is still to lose the most valuable of those defenses. Truly, over whichever way the Illinois employer is presently to betake himself, he will find it beset with thorns. On the one hand he may see himself providing liberal voluntary compensation even for trade injuries for which no court could ever force him to pay; on the other he sees his defenses in case of liability reduced to the citadel of comparative negligence. He may comfort himself also with the cheerful certainty that his legal brothers will look to it that no employe "with a good case" accepts any of the poor fare offered at the compensation table. For any presumption that the workman, seriously injured through someone's negligence, "will voluntarily accept the compensation law" provided he has the option, through lack of mandate or contract, of resorting to a more remunerative process, is sheer folly and presumes a lack of thrift, not to say intelligence, scarcely conspicuous in the American mechanic. No employer, therefore, would elect to place himself thus doubly in the hands of chance unless driven into a corner by the unpleasant alternative of a liability act. It is the mandatory element in the foreign laws which has brought about the success attending their operation, and even under an optional plan justice demands that a mandate should coincidentally bind both parties who choose to adopt it. It is manifestly unfair toward and unsafe for the employer to ask him to presume, without contract at the time of employment, that his workman will later accept a compensation schedule for all injury. This important point—evaded in the Illinois plan—is recognized and guarded in the New York law of May 24, 1910, which authorizes a written agreement to pay and accept a prescribed compensation for all injuries except for those sustained through an employer's gross negligence or in violation of law. The employer is thus legally empowered to hire only such men as will agree to waive their common-law rights in consideration of a fixed and certain compensation for all occupational injuries.

Should the statute permit or require these written agreements, it should also specify that no other contract for release from claims for injuries shall be valid, unless showing a consideration in accordance with the schedule of compensation.

The plan wisely provides that the workman, if he brings suit and is defeated, is barred from any benefits which might have accrued to him under its terms. Thus is avoided part—but a part only, as just shown—of the unjust double liability incidental to the operation of the English law.

And what are these terms? The plan follows English and French measures in ignoring mutual insurance, in placing the entire burden upon the master without contributions from the employe, and in making 50 per cent. of the daily wage the unit upon which to calculate compensation for disability. Three years' full wage paid as a lump sum is the maximum death compensation, and, as in the New York statutes, not to exceed \$3,000. The maximum duration of disability pensions is eight

years. In two important features American measures differ from foreign prototypes—in fixing a maximum of eight years to the time during which benefits are to be paid, and in the avoidance of pensions to survivors. All European laws provide permanent pensions for permanent disability and to dependent survivors. The English act, however, concedes to the employer that he may, after six months, discharge his burden by buying a state pension equal to 75 per cent. of the half-pay allowance. It is a curious fact, showing that the public is not yet educated up to the finer differences in compensation measures, that in the recent public hearings in Chicago there was no discussion of this question of the time limit of pensions. The same is true of the questionable wisdom of providing for lump sum settlements at the employe's option.

Three very important points are ignored in the commission's plan, the introduction of which will add large incentives toward its adoption by employers and a very perceptible increase in the net return to the worker: 1. A provision similar to those in the English and New York acts, by which lump sums shall be paid only into a tribunal to be disbursed by it after a scrutiny of all charges, and with the same power as a probate or bankruptcy court to pass on attorneys' fees. Contingent contracts to pay percentages out of compensation should be illegal, or subject to revision by the judicial body. 2. The plan provides for settlements by "agreement or arbitration, and for confirmation by a court of proper jurisdiction." This follows the New York statute, but the Illinois plan ingenuously fails to suggest the inevitable sequence by adding—"or by an action at law." The commission would avoid separate tribunals for these cases, and trusts that most of them will be settled out of court. It is humanly probable that the method would as frequently as heretofore strand both master and servant high and dry amidst the expenses, delay and befuddlement of the Superior Court. A study of foreign compensation law shows that where the motion is smoothest the operation of the law is placed in the hands of separate tribunals working under permanent bureaus concerned solely with adjustment of industrial claims. In England and France the working out of the principle through ordinary courts has not given the best results. In Germany, Austria, Hungary, Norway, Holland, Sweden and Denmark compensation is segregated within an insurance bureau, and industry is provided with a direct, simple, inexpensive, speedy, just and automatic method of settling its difficulties. Boards of arbitration and award of similar purpose, but with technique modified to meet American constitutions, are suggested in the Wisconsin and Minnesota plans. The Illinois plan will hardly reach an effective maturity without the aid of some such central bureau and tribunal. 3. The insurance of employers against loss through accident compensation should not be prohibited, and mutual insurance by which the workman may increase his disability allowance should be encouraged. But there should be statutory provision, especially applicable to adjustments through insurance companies, making it obligatory to fill out duplicates of release. Such releases should specify the kind and duration of disability, wages earned, amount paid in settlement, to whom and by whom actually paid,

and should be filed for record with the bureau. There should be a penalty for falsifying or failing to record these receipts. Suitable extracts from the statute, designed to enlighten the workingman as to his rights, should be printed as a part of the form of every receipt.

An analysis of recent public discussions before the Illinois liability commission yields the following summary of the situation: 1. Many employers, although opposed to any scheme imposing dual liability, are reasonably willing to accept a compensation scheme based on mutual consent at the time of employment, which would provide their workmen with surer and larger benefits than they would receive either under present methods or under a liability act. It is evident that employers fear the increase in size and number of individual judgments likely to reach them under a liability act, and would prefer either to have the law remain unaltered or to escape the uncertainties of changed liability by conceding at once a scheme of compensation not based on negligence. The general adoption of such a scheme would cause an immediate increase in insurance rates and the consumer would eventually pay the bill—and a little more. This would hardly be the case under the selective and punitive operation of an employers' liability act, and accounts for the otherwise surprising willingness of some employers to accept the alternative of a compensation plan. 2. That Illinois labor is suspicious of any project favored by the employer, and would prefer to move slowly along English lines, first invalidating old common-law defenses by an employers' liability act before proceeding to educate itself as to the terms of a compensation schedule. The attitude taken by labor is justified by past experiences, and is strengthened by the plea of its leaders that they want protection against injuries more than compensation. In the effort toward prevention a liability law, penalizing the individually negligent employer, would furnish a more effective stimulus than would a compensation act. The latter would justify the manufacturer in a general boost of prices under the plea that he must lighten his insurance load. 3. Under immediate conditions the benefits of any Illinois law embodying the principle of optional compensation will be illusory. The fact that New York recently passed a compensation law and has it now in operation is encouraging for Illinois and for every other state; but New York several years ago took the necessary preliminary step in the enactment of an employers' liability act. If our commission does not wish to see its labors go for naught in an Illinois legislature, and suffer another and less equitably disposed body to take up the work, it will prepare such a liability law as will both justly meet the present cry against industrial negligence and lay a foundation for a future compensation act.

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OCTOBER, 1910

THE ILLINOIS STATE BOARD OF HEALTH AND THE CARNEGIE FOUNDATION.

The last Bulletin of the Illinois State Board of Health, dated June, 1910, and appearing September, 1910, as usual several months late, is largely devoted to a characteristic consideration of the report of the Carnegie Foundation, which it will be remembered had some well directed criticisms of the conditions existing in Illinois, and the responsibility of the acting board in connection therewith. In this bulletin there is conclusive evidence that the board, instead of recognizing the widespread demand for an improvement of conditions existing in Chicago, is prepared to perpetuate them and indelibly blacken Illinois as the rotten spot of the world in medical education. The JOURNAL has in the past months devoted so much space to the consideration of the remarkable attitude of the acting secretary, that our readers who want to know the facts have had ample opportunity to get them. It seems almost useless for us to devote further space to the piling up of further proof of the disgraceful state of affairs, and the JOURNAL would not now sacrifice its columns for this purpose, were it not that some might suppose it had withdrawn its opposition to the further existence of the board as now constituted. Furthermore,

the remarkable series of charges which have been filed in the last sixty days against the agents of the board in Chicago, demand some attention. Although these charges have been made by parties who are little worthy of consideration, yet the character of the charges, and the number of persons making them, certainly have been sufficient to raise a dense cloud of suspicion as to the honesty of the board. The fact is, that even though the board may be innocent of the charges made against them, it has so lost prestige in the minds of the profession and the people of the state, that its opportunity for usefulness in the future has disappeared. In this connection we will quote the remarks of Dr. F. P. Norbury, at Detroit, in his presidential address before the Mississippi Valley Medical Society.

Dr. Norbury was for a number of years a member of the Committee on Medical Education of the Illinois State Medical Society, and therefore speaks of what he personally knows. We commend his statement to all honest members of the medical profession in the state. It would seem that the members of the State Medical Society should rise as one man and demand the removal of the board, responsible for the disgrace of the state:

A MEDICAL EDUCATIONAL PROBLEM

"The unselfish work of the physicians and educators who are endeavoring to bring order out of chaos in the realms of medical education, are, I believe, consistent in their mission; and while their work is unappreciated by the unthinking or biased critics, yet to me their work is the entering wedge which has already cleaved asunder old traditions, and inaugurated vastly improved facilities, standards and higher ideals in medical education. In the discussions which have taken place during this campaign, the critics somehow have lost sight of the fundamental facts that medical education is but a part of the educational propaganda of this century, the evidences of which can be seen in the discussions of all scientific and educational associations of to-day. For several years past it has been my privilege, as chairman of the Committee on Medical Education of the Illinois State Medical Society, to be in touch with this great campaign—this world movement—of which the proceedings of the Council on Medical Education of the American Medical Association and the constructive work of the Carnegie Foundation for the Advancement of Teaching are but very virile integral parts. This world movement has incorporated in it a well-planned, impartial, constructive analysis of the problems of education, and seeks their solution by the most permanent but practical methods. Medical education is undergoing evolution, and the good ship so long burdened with traditions ('the ballast which impedes the dynamics of our modern generation') has had to lighten herself of these burdens in order to keep time and in line with true progress. Medical education has made progress, this progress being based on the fundamental factors of all educational progress: First, the integration of the educational system; second, the standardizing of undergraduate work, prerequisite to professional courses (the general or preparatory education); third, the standardizing of the professional courses, as based on the requirements of modern professional courses in medicine.

"To the Council on Medical Education of the A. M. A. has been entrusted this very important duty, especially the survey of the field establishing criteria for the classifying of medical colleges (which criteria, by the way, are both liberal and elastic), and formulating standards upon which is based the educational advancement now a living reality—a gain in our national educational assets. The work of the Council has been steadily winning more and more the confidence of the sceptical and the critical. It is dealing with problems belonging to the science of education and yet essentially integral parts of the advancement of the science of medicine.

"Within the past year an endorsement of the effective efforts of the Council of the A. M. A. has come from an entirely independent but creative source of notable widening and forceful influence in the educational world, in the Flexner Report of the Carnegie Foundation for the Advancement of Teaching. This report has sounded a war cry for medical culture, for refinement in medical education, for higher ideals, for improved service, and all efforts which through educational possibilities will put the science of medicine where it truly belongs—a leading force in world-wide betterment of the supreme needs of mankind.

"The criticism excited by this report, the antagonism which it has created, and the blatant, boastful redress demanded of Flexner for telling the truth as he sees it as an expert in the science of education, is but another evidence of the primitive social standards which yet prevail in this, our boasted civilization. Somehow, the Middle West, my own state, Illinois, in particular, seems to think that medical education along high standard requirements is a luxury, and should be looked upon as such. In other words, they would put medical education on such a low standard basis that it would be a common commodity. 'Commodities of modern life cease to be considered as luxuries as soon as they become easily accessible to everybody.' Modern medical education is not a common commodity, neither a luxury; it is a necessity, a very living necessity. It must subscribe to the requirements which high social standards of to-day proclaim, seeking as they do, what is best for the welfare of mankind both in sickness and in health."

Right along this line we commend the following editorial items from the *Journal of the Indiana State Medical Society*:

"Illinois physicians have every reason to feel disgraced over the report of the Carnegie Foundation concerning medical education in Illinois and the enforcement of the medical practice laws by the Illinois State Board of Health. Even Louisville, for many years known as the medical diploma mill of the country, does not come in for such a scoring as the following, taken from the report:

"The city of Chicago is, in respect to medical education, the plague spot of the country. The state law is fairly adequate, for it empowers the board of health to establish a standard of preliminary education, laboratory equipment and clinical facilities, thus fixing the conditions which shall entitle a school to be considered reputable. In pursuance of these powers the board has made the four-year high school or its equivalent the

basis and has enumerated the essentials of the medical course, including, among other things, clinical instruction through two annual terms.

"With the indubitable connivance of the state board these provisions are and have long been flagrantly violated. Of the fourteen undergraduate medical schools above described the majority exist and prepare candidates for the Illinois state board examinations in unmistakable contravention of the law and the state board rules. These schools are as follows: (1) Chicago College of Medicine and Surgery (Valparaiso University); (2) Hahncmann Medical College; (3) Hering Medical College; (4) Illinois Medical College; (5) Bennett Medical College; (6) Physio-Medical College of Medicine and Surgery; (7) Jenner Medical College; (8) National Medical College; (9) Littlejohn College of Osteopathy. Of these only one, the National Medical University, has been deprived of 'good standing' by the state board. Without exception a large proportion of their attendance offers for admission an 'equivalent,' which is not an equivalent in any sense whatsoever; it is, nevertheless, accepted without question by the state board, though the statute explicitly states that it can exact an equivalent by 'satisfactory' examination. In the case of the night schools, for instance, one or two years' requirements are satisfied by 'coaching' one night a week in each of the several subjects; one evening is devoted to Latin, the next to English, the next to mathematics. There is absolutely no guarantee that the candidate accepted on the equivalent basis has had an education even remotely resembling the high school training which the Illinois law intends as the minimum upon which it will recognize a candidate for the physician's license. If the state board should—as in duty bound—publicly brand these schools as 'not in good standing,' by reason of their failure to require a suitable preliminary education of their students, their graduates would be immediately excluded from practice in Illinois; adjoining states would rapidly follow suit, with the result that the schools would shortly be exterminated. Fortunately the case against them does not rest alone on the question of entrance requirements, for not a single one of the schools mentioned furnishes clinical opportunities in proper abundance, and some of them even fail to provide the stipulated training in other branches: e. g., anatomy. An efficient and intelligent administration of the law would thus reduce, in short order, the medical schools of Chicago to three—Rush, Northwestern and the College of Physicians and Surgeons."

The report further says that the College of Physicians and Surgeons and the medical department of Northwestern University should greatly strengthen their laboratory instructions, and these two colleges, together with Rush, should strengthen their clinical instruction.

The question now arises: Will the diploma mills of Chicago be closed up or raise their standard so that they can be classed as at least creditable, and will the Illinois State Board of Health, which has been criminally lax in the matter of the enforcement of the medical practice act, assist in the cleaning-up process?

Following close after the report of the Carnegie Foundation concerning the low standard and general inefficiency of some of the Chicago

medical colleges come exposures by Chicago daily papers concerning the manner in which many medical students have obtained their credentials for entrance to medical schools. It seems to be conclusively proved that any person, whether possessing educational qualifications or not, has been able to buy a certificate, signed by a principal of a high school, stating that the owner is duly qualified in educational requirements to enter medical colleges demanding a high school education as a requirement for admission. This exposure, together with the evidence which warranted the Carnegie Foundation in intimating that certain Chicago medical colleges are associated with the State Board of Health in fraudulently turning out and licensing doctors, shows that the whole system of medical education and licensure in Illinois is rotten and that it is time for a house-cleaning.

It is reported that the governor of Illinois, when asked to remove the secretary of the State Board of Health for inefficiency and questionable practices, said that it was not politic for him to do so because the secretary had too much influence with members of the legislature. If the daily papers of Chicago keep up the editorially pungent criticism of the political system which permits the existence of a traffic in medical diplomas and high school certificates it may be possible that the governor of Illinois will find it politic to change his attitude. At all events, Chicago should wipe out of existence the medical diploma mills, and one of the first steps in the purification process is to secure a new State Board of Health.

CAMPAIGN FOR LEGISLATORS

We call attention to the letter in this issue from Dr. L. H. A. Nickerson, of Quincy, detailing his campaign undertaken at the Thirty-sixth district, which resulted so satisfactorily to the profession. It will be remembered Mr. Groves gave the physicians of that district the right to believe that he would stand with them during the last session, in opposing objectionable bills. This he failed to do, and his defeat is the result of his mendacity. Although this is in opposition of the fact, Mr. Groves had a good record in the legislature in most every other regard.

THE MADISON COUNTY DOCTOR.

The Madison County Medical Society, the indomitable secretary of which is Dr. E. W. Fiegenbaum, of Edwardsville, commenced July 1, 1910, the publication of a four-page monthly pamphlet, devoted to the interest of that active society. It goes without saying that with Dr. Fiegenbaum as editor each issue of the pamphlet makes good reading, and if any respectable member of the profession in Madison County escapes membership in that society we would like to see his photograph. A few years ago Madison County was supposed to be entirely intractable to

organization but it appears now to have one of the most active societies in the state.

The example of the Chicago Medical Society, the McLean, and the Madison, in issuing bulletins might be followed profitably by several other large counties in the state.

ILLINOIS STATE MEDICAL SOCIETY.

LIST OF LECTURERS OF THE BUREAU OF LECTURERS.

E. W. WEIS, Secretary.

SURGERY.

Dr. Daniel Eisendrath	Chicago
Dr. V. D. Lespinasse	Chicago
Dr. John B. Murphy	Chicago
Dr. E. J. Senn	Chicago
Dr. M. L. Harris	Chicago
Dr. Cassius D. Rogers	Chicago
Dr. A. E. Halstead	Chicago
Dr. F. A. Besley	Chicago
Dr. William Hessert	Chicago
Dr. E. Wyllys Andrews	Chicago
Dr. J. L. Wiggins	East St. Louis
Dr. George W. Cole	St. Louis, Mo.
Dr. Willard Bartlett	St. Louis, Mo.
Dr. Francis Reder	St. Louis, Mo.
Dr. Carl E. Black	Jacksonville
Dr. E. Mammen	Bloomington
Dr. J. W. Hamilton	Mt. Vernon
Dr. J. H. Stealy	Freeport
Dr. C. U. Collins	Peoria
Dr. George N. Kreider	Springfield
Dr. R. J. Christie	Quincy
Dr. S. C. Stremmel	Macomb
Dr. H. C. Mitchell	Carbondale
Dr. W. K. Newcomb	Champaign

OBSTETRICS.

Dr. Joseph B. De Lee	Chicago
Dr. Carey Culbertson	Chicago
Dr. Hugo Ehrenfest	St. Louis, Mo.

GENITO-URINARY.

Dr. Louis E. Schmidt	Chicago
Dr. F. Kreissl	Chicago
Dr. J. S. Nagel	Chicago
Dr. C. E. Burford	St. Louis, Mo.

MEDICINE.

Dr. Samuel Dodds	Cairo
Dr. E. W. Feigenbaum	Edwardsville

Dr. Frederick Tice.....	Chicago
Dr. Arthur R. Edwards.....	Chicago
Dr. Alfred C. Crofton.....	Chicago
Dr. J. T. McAnally.....	Carbondale
Dr. Frank Billings.....	Chicago
Dr. J. F. Percy.....	Galesburg
Dr. J. W. Hamilton.....	Mt. Vernon
Dr. George A. Zeller.....	Peoria
Dr. J. W. Pettit.....	Ottawa
Dr. Hugo Summa.....	St. Louis, Mo.
Dr. J. S. Myer.....	St. Louis, Mo.
Dr. Albert E. Taussig.....	St. Louis, Mo.
Dr. E. H. Butterfield.....	Ottawa, Ill.
Dr. C. W. Lillie.....	East St. Louis

EAR, NOSE AND THROAT.

Dr. Albert H. Andrews.....	Chicago
Dr. F. Gurney Stubbs.....	Chicago
Dr. John R. Fletcher.....	Chicago
Dr. C. M. Robertson.....	Chicago
Dr. W. E. Sauer.....	St. Louis, Mo.
Dr. M. A. Goldstein.....	St. Louis, Mo.
Dr. Frank Allport.....	Chicago

EYE.

Dr. Willis O. Nance.....	Chicago
Dr. W. Allen Barr.....	Chicago
Dr. Thomas Faith.....	Chicago
Dr. A. B. Middleton.....	Pontiac
Dr. Meyer Weiner.....	St. Louis, Mo.
Dr. John Green, Jr.....	St. Louis, Mo.
Dr. G. C. Adams.....	East St. Louis, Ill.

SKIN.

Dr. Oliver S. Ormsby.....	Chicago
Dr. R. R. Campbell.....	Chicago
Dr. W. A. Pusey.....	Chicago

NEUROLOGY.

Dr. Hugh T. Patrick.....	Chicago
Dr. L. Harrison Mettler.....	Chicago
Dr. George A. Zeller.....	Peoria
Dr. Frank P. Norbury.....	Jacksonville
Dr. V. H. Podstata.....	Elgin
Dr. W. W. Graves.....	St. Louis, Mo.

RECTUM.

Dr. F. C. Vandervoort.....	Bloomington
Dr. J. Rawson Pennington.....	Chicago

PEDIATRICS.

Dr. Alfred C. Cotton.....	Chicago
Dr. J. Warren Van Derslice.....	Chicago

ORTHOPEDICS.

Dr. Alex C. Wiener.....	Chicago
Dr. John L. Porter.....	Chicago
Dr. John Ridlon.....	Chicago

PATHOLOGY.

Dr. R. L. Thompson.....	St. Louis, Mo.
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STOMACH.

Dr. H. W. Soper.....	St. Louis, Mo.
Dr. Milton H. Mack.....	Chicago

ORGANIZATION.

Dr. H. C. Mitchell.....	Carbondale
Dr. J. E. Pettit.....	Ottawa
Dr. E. W. Weis.....	Ottawa

PUBLIC HEALTH AND PREVENTIVE MEDICINE.

Dr. Henry B. Hemenway.....	Evanston, Ill.
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THE GOVERNMENT BEGINS THE PROSECUTION OF THE PATENT MEDICINE FRAUDS.

The final test of the power of the United States government to punish patent medicine manufacturers is being put to the test in Washington at this time. The country seems to have fully aroused to the magnitude of this evil, and unless the powerful interests have more influence than they, the doom of the nostrum in America seems to be at hand. The following copy of an editorial which appeared in the *Chicago Tribune* of September 24, stating the conditions from the standpoint of the laity in excellent language, should give encouragement to medical men in their warfare against these and the proprietaries.

PUT A STOP TO THEIR LIES

Suits are about to be begun at Washington under the pure food law against the manufacturers of certain patent medicines. The charge will be that they promise impossibilities in order to sell their wares, and thus are seeking to get money under false pretenses. Some of these audacious traders on human credulity say that their nostrums will cure all diseases. Everybody ought to know that that must be a lie, but there are simpletons who do not. Other manufacturers allege that their compounds will cure certain ailments which, as medical men know, cannot be cured by the drugs used. The malady may indeed be aggravated by them.

The men whose industry, so profitable to themselves and so hurtful to the public, is to be attacked have a defense in readiness. It is that it is not unlawful to lie as regards the effects of their remedies. All that they are obliged to do, they will allege, is to specify the ingredients. They hope this plea will be strong enough to enable them to continue to defraud credulous invalids through assurances of a "sure cure" at so much per bottle or dozen bottles.

If the trade of these arrant deceivers can be broken up as far as interstate business is concerned, much will be gained, and if the states shall follow suit still more. There are lies which no law can prohibit and no court punish, but that patent medicine lying which imperils life and health cannot be classed among the venal falsehoods.

The alleged right of a patent medicine man to make money by promising a cure when there can be no cure cannot be admitted. It is plain cheating and should be stopped. If the contemplated suits shall put out of business men who have made their living by fraud, so much the better for the community.

THE TROPICS AS A HEALTH RESORT.

We are just in receipt of the annual report of the Bureau of Health of the Philippine Islands, dated July 26, 1909. It contains a great deal of interest to the physician and sanitarian, on life in the far-away Island Possessions of the United States. Owing to our limited space it is impossible to note many of these items, but the remarks of the commissioners on health in the tropics is so different from that which has been held for many centuries, that we can not refrain from calling attention to it. From this it appears that individuals seeking longevity will fly to the tropics, instead of avoiding them as in the past. Observe the tribute paid to vaccination and pure water and the advice to avoid alcohol.

HEALTH IN THE TROPICS.

As each year's experience is added to that which went before, it is becoming more and more evident that those who observe a few simple rules can maintain good health in the tropics with more certainty than is possible in a temperate climate.

The diseases which occur most frequently in temperate climates, such as pneumonia, rheumatism, diphtheria, and scarlet fever, are the ones for which the prophylaxis is not well known, while the more common diseases in the tropics, like dysentery, hookworm, and malaria, are the ones for which the prophylaxis is well known. The following simple rules which are issued by this Bureau, if faithfully observed, will practically insure anyone from contracting the last-mentioned diseases:

1. Be vaccinated to-day. The Bureau of Health will do it free of charge.

2. Never drink any water unless it has been either boiled or distilled, nor eat any raw vegetables. If you observe this rule carefully you will probably never contract dysentery, typhoid fever, cholera, or any other disease that originates in the intestines. Disregard of this rule is responsible for the returning to the United States of over 50 per cent. of the invalids who leave these islands.

3. Fruit is wholesome and may generally be eaten raw with impunity, provided it is of a kind that grows upon trees, well above ground.

4. Avoid patent medicines. "Do not put drugs of which you know nothing into bodies of which you know less."

5. Alcoholic stimulants are not necessary, the advice of the "old resident," to the contrary notwithstanding.

6. Generally disease carrying mosquitoes fly only at night; therefore always sleep under a good mosquito net.

7. Otherwise observe the same hygienic rules that are applicable to temperate climates, including physical exercise.

Correspondence

JOINT MEETING OF THE ADAMS, PIKE, CALHOUN AND SCOTT COUNTIES LEGISLATIVE COMMITTEE

QUINCY, ILL., Sept. 24, 1910.

GEORGE N. KREIDER, M.D.,

Editor ILLINOIS MEDICAL JOURNAL, Springfield, Ill.

My Dear Doctor:—Your letter of the 21st received. At the last session of the Legislature, the Hon. Jacob Groves led the physicians to believe that he would vote against the osteopathic and other objectionable bills.

Charles E. Bolin was non-committal; they both voted for these bills. Their action not meeting with the approval of the profession, led them to consider some plan to defeat them for renomination. A joint legislative committee, comprising Adams, Pike, Scott and Calhoun counties, was organized with a view of leaving them both at home. The committee accomplished a part of what they set out to do. We did not elect both of our men, but taught the defeated candidates a lesson that will not soon be forgotten. We were handicapped in having both of our candidates for the Legislature from Adams, which could not well be avoided, as Hon. Sylvester Allen of Scott County came out late in the canvass after we had laid our plans. There is no doubt that Mr. Allen would have been endorsed by the committee if he had entered the field earlier.

Our main object was to scalp the Hon. Jacob Groves, who had played double and was very obnoxious to the profession of Adams County. We took enough votes away from Mr. Groves to give the nomination to Messrs. Charles E. Bolin and William H. Hoffman. We divided our votes between Hoffman and Hawkins. The profession is to be congratulated in securing two good men to represent them at Springfield, both of whom are favorable to higher medical education.

We understand that in the midst of the canvass, Mr. Charles E. Bolin, of Pike County, stated that he had made a mistake in the last session of the Legislature in voting for the Osteopathic Bill, and that in the future he would be found acting with us.

If it is thought advisable, will be glad to write a paper, to be read at the next meeting of the State Society, detailing our work and give the reasons why we actively entered the political arena with a view of defeating the Hon. Jacob Groves, who was serving his fourth term, and the Hon. Charles E. Bolin, who was serving his second term in the Illinois Legislature.

Ours, the Thirty-sixth Senatorial District, is overwhelmingly Democratic, hence it was necessary to defeat them in the nomination.

You are at liberty to publish this letter in the JOURNAL, or may use it as a basis for an editorial.

The joint legislative committee are under special obligation to our state secretary, E. W. Weis; Carl E. Black, of the judicial council, and

L. C. Taylor, of the legislative committee, for timely and valuable letters written to each member of this district during this medico-political campaign. We believe we have made good.

Yours truly,

L. H. A. NICKERSON,
Chairman Executive Committee.

DR. LEMEN DENIES STATEMENT.

ST. LOUIS, Mo., Sept. 15, 1910.

To the Editor:—I wish you would state in your JOURNAL that I am not connected with the American Medical College of St. Louis. The inclusion of my name in the announcement of that college was done without my authority or knowledge. I do not believe we are in need of any more colleges, and consequently I would not aid in building up another. I resigned from a good college because I desired freedom in a medical way, and I would certainly not connect myself with another medical college.

Yours truly,

J. R. LEMEN.

A PIONEER DOCTOR.

Moore, Dr. Edmund, deceased, a pioneer physician and surgeon of Morgan County, was born in Elphin, County Roscommon, Ireland, May 26, 1798, a son of Lewis and Ellen Lockwood Moore. The paternal ancestry of the family is Scotch-Irish. Dr. Moore's mother was a descendant of the historic Shannon family, and had two brothers who attained great distinction in British military and naval affairs. One of these, a lieutenant under Nelson, commanded a ship at the battle of the Nile, and also fought at the battle of Copenhagen and at Trafalgar, where Nelson was killed. He died at the Soldiers' Home at Greenwich. Another brother, who became a general in the British army, was in the East India service for many years, and died while in the East, the husband of an East Indian princess.

When Edmund Moore was an infant in arms, his parents came to the United States, locating temporarily at Frankfort, Ky. Soon afterward they removed to Florida, then a Spanish colony, and subsequently to Louisiana, then under French dominion, remaining about five years in the two provinces. Returning to Bloomfield, Nelson County, Ky., the elder Moore took up a tract of land and spent the remainder of his life there. There Edmund Moore was also reared and educated. After reading medicine under the supervision of Dr. Bemis, at Bardstown, Ky., and attending lectures at Louisville, he began practice under a state license at Rockport, Ind., remaining there until his removal to Morgan County, Ill., in 1827. Here he was examined and licensed by the State of Illinois. Upon arriving in Morgan County he purchased a tract of land located about one mile east of the farm now owned by George W. Moore, his son,

erected a cabin, and occupied that place about six years, practicing his profession and improving his farm. In 1833 he located on Section 29 of the same township, where he spent the balance of his life, dying there May 29, 1877.

Dr. Moore was a splendid specimen of manhood, mentally and physically. He typified the "doctor of the old school," immortalized by Ian MacLaren, the Scotch novelist; for, during the half century of his residence in Morgan County, he was called upon to perform a vast amount of professional work for which he expected and received no remuneration. His practice necessitated very extensive rides throughout the surrounding country, and his trips to relieve suffering humanity were frequently attended by great personal risk, through exposure to the elements in a wild and sparsely settled country. Most of his early practice was accomplished on horseback, with the old-fashioned saddlebags. For many years there were no other physicians in his neighborhood, and it was not infrequently the case that he was called to ride as far south as Edwardsville. Many of his rides covered a distance of sixty miles or more from his home. He became an acknowledged expert in the diagnosis and treatment of the fevers and other diseases peculiar to the Illinois and Mississippi valleys. During the Black Hawk War he was surgeon of the Third Regiment of Illinois troops, which rendezvoused but was not called into active service. During the War of 1812 he had endeavored to enlist for the service under General Harrison in the Canadian campaign, but was not accepted on account of his delicate health.

Dr. Moore was well acquainted with Abraham Lincoln as a boy and man. While practicing his profession in Spencer County, Ind., he was frequently called upon to attend the Lincoln family, but lost sight of the future President after his own removal to Morgan County. After Lincoln's election to Congress, the two men met one day on the streets of Jacksonville, when the former, extending his hand to Dr. Moore, asked him if he did not remember his former patient. The Doctor finally recognized him and in later years reverted to the incident with feelings of great pleasure.

Though deeply interested in public matters, the only office which Dr. Moore ever consented to fill was that of township treasurer of school funds. A whig in early life, he became a republican upon the founding of that party, voting for John C. Fremont for the presidency.

A romantic incident of the Revolutionary period is related by George W. Moore, and is here preserved for the first time in print. During an engagement between the British and Colonial troops near the home of the Cotton and the O'Neal families in Fairfax County, Va., a British soldier who had received a serious bullet wound in the abdomen dragged himself to the Cotton home and asked for a drink of milk. This was furnished to him by Mrs. Cotton, who invited the sufferer into the house that he might receive the care and treatment necessary to his recovery. The milk that he drank passed from his digestive organs through the wound, soothing it and eventually curing him. He remained at the Cotton home, and ultimately transferred his allegiance to the Patriot cause.

COUNTY AND DISTRICT SOCIETIES.

CARROLL COUNTY

The Carroll County Medical Society met in the Carnegie Library at Mt. Carroll, Tuesday, May 10. There were present Drs. Nathason, Colehour, Clay, McPherson, Mirshow, McGrath, Hendricks, Schreiter, Powers, Overholser, Rice, Metcalf, Johnson, Rinedollar, Paekard, and Dr. J. H. Stealy of Freeport. The program which was of unusual interest was as follows: Dr. J. D. Overholser, Milledgeville, "Malignant Edema;" Dr. J. B. Schreiter, Savanna, "The Relation of the Coroner to the Physician;" Dr. J. L. Nathason, Chadwick, "Cerebral Hemorrhage;" Dr. J. H. Stealy, Freeport, "Rehearsal and Differentiation of Acute Abdominal Diseases."

Dr. Stealy, Councilor of District No. 1, read a fine paper. He assisted in the discussions and added not a little to the interest of the meeting. The Society voted to hold its September meeting in Savanna, Ill.

H. S. METCALF, Secretary.

The Carroll County Medical Society met in the City Hall at Savanna, September 6. After a business session the following program was carried out:

Dr. Wm. H. Perry, Sterling, "Diagnosis of Abdominal Pain;" Dr. J. F. Perey, Galesburg, "The Relative Influence of Law, Religion and Medicine on the Human Race;" Dr. G. E. Mereshon, Mt. Carroll, "Report of the Meeting of the American Medical Association;" Dr. Alexander Gray, Savanna, "The Hygiene of Infancy and Childhood;" Dr. C. M. McPherson, Hazelhurst, "Report of the Meeting of the Illinois State Medical Society;" "Everybody Report an Interesting Case."

Reports of interesting cases proved of value, especially Dr. Colehour's experience with antitoxin in a malignant case of diphtheria. Dr. Colehour said: "On the 10th of August, I was called to see a case of sore throat. On examination I found a membrane on the right tonsil and a portion of the pharyngeal vault. As the patient had been ill three days, I did not think much of the case being serious but gave immediately 10,000 units of antitoxin. The temperature was 102, pulse 80, and very good. In about ten hours I called again and found the membrane extended to both tonsils, and covering the posterior pharyngeal wall. The membrane was very dark in color and the patient was spitting a great deal of bloody mucus. It was with difficulty that I examined the throat, owing to edema. Albumin was present in the urine in considerable quantity. I immediately gave another 10,000 units and left him fairly comfortable, although now he was unable to swallow even liquids. In about six hours I was hurriedly called and informed that the patient was suffocating and that he had to be fanned; his respiration was through the mouth. I gave in a large sterile glass syringe 25,000 units of antitoxin. I was unable to examine the throat for swelling of the neck, but the membrane being very dark was visible on the uvula and in front of it. The cervical glands on the right side were greatly swollen and extended beyond the angle of the jaw; the sterno-cleido-mastoid muscle was swollen nearly to the nipple. The patient showed some signs of cyanosis. Pulse was 60, temperature 101.5. He was restless and delirious. I returned in four hours and found no improvement, but the swelling had extended and included the posterior glands and both sterno-cleido-mastoid muscles. Cyanosis increased. As I was fully aware by this time that I had to act quickly, that I had a malignant case of diphtheria to contend with, I gave the patient 20,000 units of antitoxin, and then 10,000 units every four hours. I had given nearly 100,000 in all before I had the case under control. The patient made an uneventful recovery."

Dr. Perry's paper on "Diagnosis of Abdominal Pain" was a valuable study of the subject. Following is a résumé of the paper:

1. Varieties of Pain. (1) Colics, caused by stenotic processes, and they generally radiate. (2) Shooting or migratory pains; are neuralgic or hysterical. (3) Cutting, sharp or sticking pains involve inflammations of serous surfaces. (4) Gnawing or boring pains involve mucous membranes and parenchymatous organs.

2. Factors modifying pain, according to Dr. Rudolph Schmidt of Vienna: (1) Position; there being a position of maximum pain. (2) motion; pain increased, especially when organs of motion are involved. (3) Pressure; pain increased by high blood pressure, or by direct palpation or through inflation of hollow viscera. (4) Food and drugs; food may allay pain, or increase pain till vomiting. Local anesthetics, as cocain, or anesthesia will allay pain of gastric disease in fifteen or twenty minutes. (5) Organic function; modifies pain, as during defecation, respiration, menstruation, vomiting, etc.

3. Symptoms of severe pain: (1) Dilated pupils. (2) Fast heart and respiration. (3) Abdominal rigidity. (4) Shock. (5) Passage of a large amount of limpid urine.

A systematic examination of the abdominal region for causes of pain will necessitate an examination of the various systems of organs included therein.

1. Causes arising in the abdominal walls, or organs of motion, include lesions of the spine or pelvis, hernias at the usual sites, or from ventral gaps, suppuration intramuscular, or of the deep iliac lymph nodes, perivesical or perirenal, cryptorchism, psoas abscess, etc.

2. Causes arising in the digestive system, including the gall bladder and ducts, call for the consideration of gastric and duodenal ulcer, cancer, or perforation, gastralgiæ, pyloric stenosis benign or malignant; lesions of the pancreas; intestinal ulceration, strangulation or incarceration, malignancy; appendicitis, intussusception volvulus; lead colic, intoxications, diseases of the liver substance, capsule, or stenosis of the gall-bladder ducts, etc.

3. Urinary system includes lesions of the kidney substance, as nephritis, tumor, tuberculosis, pyelonephrosis, renal infarct, stenosis of the pelvis and ureter; inflammation of the bladder, or tumor.

4. Pelvis lesions to be considered are ectopic gestation, twisted tumor pedicle, tubal infection, malpositions of the uterus, peritonitis and tumors.

4. Conclusions: (1) Abdominal pain is the commonest symptom and is usually early. (2) It should not be checked before its cause is known. (3) Careful physical examination should be made to corroborate by anatomical findings the subjective sensation of the patient.

At the morning session Dr. J. F. Percy of Galesburg read a very interesting address on "The Relative Influence of Law, Religion and Medicine on the Human Race."

The paper was heartily appreciated.

THE RELATIVE INFLUENCE OF LAW, RELIGION AND MEDICINE ON

THE HUMAN RACE

J. F. PERCY, M.D., GALESBURG

Any great department of human endeavor can be judged only from the basis of what its leaders have accomplished. From the leaders, the rank and file get their impulse for good or evil, and these again sway the mass in such a way that their acts become the essence of human conduct. The purpose of my paper is to show, as far as I may, what the three so-called learned professions have done, through their leaders, toward helping man in his onward progress toward obtaining the best possible form of health, happiness and justice.

The memory of man, which we call history when it is written, tells us that medicine started where law and religion began. In the beginning it had the same superstition, the same ignorance, and the same inadequate comprehension of its real mission that law and religion had. To-day, law and religion still hold to their

primitive foundations, while medicine, in all of its history, has made of its past steps that have led it upward among the peaks where sorrow, pain and anguish cannot endure. The three departments of human effort under discussion, all spring from the same source, viz., the human family. To discuss them in the way of comparison, is therefore much like carrying coals to Newcastle.

Man has continuously contended with his environment, even when he himself was responsible for his surroundings. Man, to-day, is contending with his laws and his religions. Why? Because they are not what he wants. He has too much of one, and not enough of the other. He did this for centuries with medicine. He finally learned that when it was a part of religion, it was out of place, and he found this to be true also when he removed it from among the barbers. Man found a place for medicine at last in the sciences, and after he placed it there, it has gone with leaps and bounds as the most beneficent, altruistic representative of human success in the world to-day. Law and religion will finally be placed among the sciences also; but till they are, they cannot hope to compete with medicine as a science in its present comfort-giving assistance in the progress of the race.

Established religion and our present application of law are in a final struggle for existence. Law, with its ages of opportunity, has never made good the undying golden rule. Religion has lived and flourished in superstition and bigotry has been its chief by-product. When it was kept down by tyranny and oppression, when it was deprived of its place as a political power, it showed its greatest strength, and did its most beneficent work. Medicine makes its errors of to-day make more sure the science of to-morrow. Organized religion has always feared science when it could not control it.

Eighty-six per cent. of the present members of our National Congress are lawyers. But in spite of this immense advantage, with all the prestige that it gives, our legal practitioners do not meet with certainty, gravity and promptness the demands that are made upon them by rich and poor alike. Technicalities, as I see them, are the only defense of the practicing attorney against the ignorant judge whose election in this country the bar has done nothing to prevent.

All three professions are engaged with the welfare of the human biped; the one with his social relations, the second with his physical relations, and the third with the things that stimulate him spiritually; the one with making his life endurable, the other with making his life possible, and the aim of the last is to give him mental comfort and peace.

But the legal profession and the theological profession are scientifically behind the medical profession. Either may entertain society and itself with more mental gymnastics, more intellectual pyrotechnics; the molecules of its gray matter may even more easily and readily assume the relation which results in what is called cerebration; but their accumulation of information, their real scientific assets are distinctly less in quantity and quality than those which confessedly belong to medicine. Why is this? The answer is but a restatement of the axiom that to retain real intellectual life, to be able to search for knowledge, to dig into the foundations of the earth for it, to grind rocks to their atoms for it, to tear life to pieces to its very omeban protoplasm for it, to follow Truth to her hiding places, to find her and hold her—all this, now, as of old, needs a mind untrammelled, a brain unshackled, needs intellectual freedom.

The medical profession has it, law and religion have it not. Right here both law and religion stumble and fall, not from any mental or moral obliquity, but because they can go no farther. The lawyer stands tied to a judge, the judge to a precedent; the minister to a creed or a theory that mayhap was evolved from the mind of a monk starving because of a religious fanaticism in a musty and reeking cell. There stands the eternal confrontation of both of these professions. It is their impassible barrier—Truth is what somebody says it is. There is no appeal, no re-examination, no further inquiry, no scalpel, no microscope, no post-mortem.

Law shades its opinions in ways that would put to shame the oracle at Delphi. In this way, quackery in all its forms finds aid enough to live outside

the bounds of its real limitations. Lawyers have it within their power to give us an officer within the National cabinet, for the conservation of the health of all the people. National health matters, in this great country of ours, are merely an appendage of the Treasury Department at Washington; while hog cholera has an officer to look after it in the President's cabinet. Law gives no comfort except for money. Law has no legal clinics, no hospitals, no temples over which it has inscribed: "Come without money and without price and find justice"; no cities of refuge where the ignorant, the down-trodden, the foreigner, the unprotected woman, the homeless child, will be given the benefits of its protection without money. Law has never attempted to equalize the great injustices of life. Law has never read the word "altruism" into its statutes. Law, in one supreme moment of glorious vision, said that all men are born free and equal, and then immediately proceeded to sell them from the market-place to the highest bidder. Both law and religion have vivisectioned human beings in order to destroy their opinions. Medicine vivisectioned "in order to make them live."

CLINTON COUNTY

The regular meeting of the Clinton County Medical Society was held in the City Hall, at Trenton, Tuesday, August 9, 1910. The meeting was called to order by the president, Dr. J. G. Vogt, and the following members were present: Drs. Bechtold, Wilcox, Vernon, Drake, Gordon, J. W. DuComb, Roane, Rienhard, Carter, Vogt and Klutho.

The minutes of the previous meeting were read and accepted. Owing to the late arrival of most of the members the regular order of business was curtailed. Dr. A. E. Meisenbach from St. Louis, who kindly responded to an invitation to be present at our meeting, showed some very interesting pathologic specimens, consisting of kidneys, gall-bladders and uterus, giving history and data of each, then followed discussions with a number of questions which the doctor answered, gave the society two hours good, solid and instructive entertainment. Drs. Roane and Vogt, our delegates to the State convention made their report. The secretary was then instructed to co-operate with Dr. J. J. Moroney, member of the medico-legal committee, to ascertain the attitude of the candidates now running for office as representatives for our district in regard to certain medical legislation and report the result to each and every member of the society before the primary. A vote of thanks was given to both Dr. E. A. Meisenbach and Mrs. J. G. Vogt for their entertainment of the society. The next meeting will be held in Shattuc on the second Tuesday in November, 1910.

JOHN C. KLUTHO, Secretary.

CRAWFORD COUNTY.

The regular bi-monthly meeting of the Crawford County Medical Society was held at the Carnegie Library, Robinson, Thursday, September 15, at 1:30 p. m. Program: "Cancer of the Uterus," Dr. Geo. C. Kasdorf; paper, Dr. J. W. Kirk.

A. LYMAN LOWE, Secretary.

JACKSON COUNTY

The third quarterly meeting of the Jackson County Medical Society was held in the parlors of the Jackson Club, at Murphysboro, Sept. 15, 1910. Present Drs. McAnally, Wayman, Molz, Carter, Essiek, Tweedy, Barrow, Horstman, Orsmy. Visitors: Dr. W. W. House, Oraville, Dr. John Zahorsky, St. Louis, Mo.

At this meeting resolutions were presented by Dr. Molz, voted upon and carried, that the meetings be changed from quarterly to monthly. Each succeeding meeting to be announced at the sessions.

Program: Dr. John Zahorsky of St. Louis held a pediatric clinic. A case of "Psoas Abscess" was presented by Dr. McAnally. A case of "Ascites" was presented by Dr. Molz. Dr. Zahorsky read a very able paper entitled, "Urinary Infections of Childhood."

A rising vote of thanks was tendered Dr. Zahorsky for his courtesy and the secretary was instructed to reimburse Dr. Zahorsky in full for his expenditures of this trip. Adjourned.

RAY B. ESSICK, Secretary-Treasurer.

LAKE COUNTY.

The following is a report of the recent meeting of the Lake County Medical Society.

The meeting of the Lake County Medical Society was held at the Masonic Hall, Wauconda, Ill., Sept. 20, 1910. The meeting was presided over by President Martin E. Fuller. The secretary's report was read and approved. Dr. R. C. McCormick of Wauconda was then elected a member of the society, after having been passed on by the board of censors. The following program was then carried out:

"Differential Diagnosis of Pelvic Diseases," Martin E. Fuller. Discussion of same by Drs. Gourley, Foley, Bouton, Wiechelt, Shering, Gavin, Ludwig and Wells. "What Shall We Do in the Home to Have Our Orders Carried Out?" Dr. M. J. Kalowsky. Discussed by Drs. Holm, Bouton, Fuller, Shearer, McCormick and Ludwig. "Remuneration," Dr. C. V. Arthur Wiechelt. Discussed by Drs. Watterson and Gavin. Address of welcome by president of the village board by R. C. Kent, was responded to by the secretary of the society.

Vote of thanks was then extended to Dr. Fuller for his excellent entertainment of the day, when he had planned hunting, fishing, rowing and baseball for the entire day's outing for members of the society, which was taken advantage of by a large number of the members. The society then adjourned to the dining-room in the Woodman Hall, where a nice chicken supper was served by the ladies of the church and was the treat of Dr. Fuller, who, following the repast, was voted a jolly good fellow. Those present were: Drs. Churchill, Martin, Galloway, Bellows, Fuller, Taylor, Turner, Holm, Bouton, McCormick, Kalowsky, Gourley, Foley, Young, Gavin, Ludwig, Niles, Jolley, Wiechelt, Wells, Sherding, Shearer, Best, Golding, Richardson, Sowles, Hughes and Messrs. Graham, Kent and Carr.

W. H. WATTERSON, Secretary.

MADISON COUNTY

The Madison County Medical Society, met in regular session September 2 in the rooms of the Edwardsville Commercial Club, with President G. Taphorn in the chair. Members present: Drs. Smith, Ihne, Wilkinson, Robinson, Zoller, Barnsback, Taphorn, Sutter, J. H. Fiegenbaum, Cook, Oliver, Sims, Hirsch, Threadgill, Dorr, Schreifels, Harrison, Wahl, Brown, Burroughs, Siegel, King, Yerkes, Binney, Foulds, Hastings, Kirchner, Armbruster and E. W. Fiegenbaum. Visitors: Dr. C. M. Riley of Alton and Dr. Hugo C. H. Schroeder of Granite City.

Several applications for membership were received and Drs. Christofer Theodoroff, Hugo C. H. Schroeder of Granite City and C. M. Riley of Alton were elected without dissenting vote. Other applications were held by the Board of Censors to report at our next meeting.

Dr. Siegel, chairman of committee on state delegate, reported the following:

Resolved: That the following shall be added to Section 6, Chapter 3, of our By-Laws: "When the delegate and alternate are both absent at a state meeting, the members of this society who are present shall elect one of their number to represent this society as delegate."

Report adopted and resolution laid over until the next regular meeting.

The society endorsed the publication of "The Madison County Doctor" and ordered it to be continued. On motion of Dr. Smith, the society elected Dr. E. W. Fiegenbaum as its member of the legislative committee.

President Taphorn then delivered his annual address on the subject, "Liability of the General Practitioner in Fracture Cases," a very interesting paper and one that brought out a lively discussion, ably led by Dr. Siegel of Collinsville.

Dr. Ihne, of Fosterburg, announced the death of Flora Clement Everett, wife of Dr. W. W. Everett, of Highland, and mother of Dr. E. A. Everett, of Alhambra. A committee consisting of Drs. Ihne and Sims presented suitable resolutions of sympathy and condolence, which were adopted, and the secretary was ordered to send copies to the respective members.

Several other matters of vital interest to the welfare of the society were referred to the Board of Censors who were requested to investigate and report at our next meeting.

Adjourned to meet in Alton on the first Friday in December.

E. W. FIEGENBAUM, Secretary.

The following are the officers of the Madison County Medical Society: President, Dr. G. Taphorn, Alton; vice-president, Dr. W. H. C. Smith, Godfrey; secretary, Dr. E. W. Fiegenbaum, Edwardsville; treasurer, Dr. J. H. Fiegenbaum, Alton; state delegate, Dr. T. L. Foulds, Alton; member medico-legal committee, Dr. J. M. Pfeifferberger, Alton. Board of censors: Dr. S. T. Robinson, Edwardsville; Dr. W. H. C. Smith, Godfrey; Dr. W. W. Everett, Highland.

June 14 was a red letter day in the history of this society. Invitations had been sent to every member and thirty-one responded by accepting the generous hospitality of our president, Dr. G. Taphorn of Alton. Our host gave us an excellent dinner at the Illini Hotel in Alton, after which the steamer "Alton" was taken for an excursion up the river. At Piasa we were given an hour for the inspection of the Chautauqua grounds, and then proceeded up the mouth of the Illinois River. Here the return journey began and we arrived at Alton a little after five o'clock. It was a day of recreation and was enjoyed by all that were fortunate enough to be present. It gave us all an opportunity of forming and renewing acquaintances, which will tend to the betterment of professional relations and increase the interest in our society. At the suggestion of Dr. T. P. Yerkes a vote of thanks was tendered to Dr. Taphorn for this splendid entertainment.

August 11 was another day of recreation, when the members of our society met at the beautiful country home of our vice-president, Dr. W. H. C. Smith, Beverly Farm, Godfrey. The fact that the meeting was held in an extreme corner of the county and in the midst of the busy season, prevented many of our members from attending, but those who were present had a most enjoyable outing. A bountiful lunch was served during the afternoon and at the suggestion of Dr. Ihne, of Fosterburg, a vote of thanks was tendered Dr. and Mrs. Smith for their generous hospitality. Dr. Smith conducts a school for nervous and backward children, which has met with great success.

NEWS OF THE STATE

PERSONALS.

Dr. Porter W. Hopkins, Cullom, has sailed for Europe.

Dr. Wm. J. Butler, Chicago, has returned from Europe.

Dr. and Mrs. Thos. D. Palmer have returned from Europe.

Dr. Herbert C. Jones, Decatur, has returned from Europe.

Dr. M. Altman, Springfield, has removed to Milwaukee, Wis.

Dr. G. Paull Marquis and William L. Baum, Chicago, have gone to Europe.

Dr. C. G. Farnum, of Brimfield, has located in Peoria after a period of study in Vienna.

Dr. Mortimer Frank has been appointed a member of the Chicago Public Library Board.

Dr. Edward S. Winbigler, Alexis, is reported to be seriously ill at his home with septicemia.

Dr. B. K. Shimonek has been elected director for the North American Esperanto Association.

Dr. and Mrs. A. D. Bridgman, Decatur, celebrated their golden wedding anniversary, August 31.

Dr. Julius H. Hess, Chicago, has returned from four months spent among the pediatric clinics of Europe.

Dr. Harry W. Ackerman, Rockford, has been appointed first lieutenant of the Third Regiment, Illinois National Guards.

Drs. Malford Hamm, Lay G. Burroughs, and Edgar A. Cook have been appointed township physicians at Edwardsville.

Dr. Thomas M. Leahy has passed the state civil service examination for assistant physician in the state charitable institution.

Dr. Lewis J. Linder, of East St. Louis, has returned from a year's study at Berlin and Vienna, and will resume practice in that city.

Dr. G. W. Fuller, of Peoria, has removed to Danville, and announces that he will devote his time particularly to the practice of surgery.

Lieutenant-Colonel Henry Richings, Rockford, surgeon of the Third Brigade, Illinois National Guard, has been placed on the retired list.

Dr. Anthony G. Whittman, Blue Island, has passed the civil service examination for assistant physician in the state charitable institution.

Dr. H. G. Langworthy, of Dubuque, Iowa, well known to the physicians of Northwest Illinois, has fitted up an infirmary for the treatment of the diseases of the eye, ear, nose and throat.

NEWS.

—H. V. Mellinger, M.D., of Chicago, has opened an office at 100 State Street, and changed his residence to 3218 Fullerton Avenue.

—Dr. Ethie L. Lobdell and Dr. Jennie B. Clark, of Chicago, have returned from an extensive trip in Europe, visiting hospitals and clinics.

—The American Medical Missionary College of Battle Creek and Chicago has been merged with the College of Physicians and Surgeons, Chicago, the Medical Department of the University of Illinois.

—Dr. A. A. Knapp, formerly of Brimfield, has returned from a year's study in Vienna and located at Peoria. The partnership existing between Drs. Knapp and Farnum, at Brimfield, will be continued at Peoria.

—Dr. J. M. Rainey, Chicago, was exonerated by a coroner's jury on the plea of a self defence for killing Louen V. Atkins, a former partner in a fake medicine concern in a quarrel over a check claimed by both.

—Dr. A. J. Goodwin, of Bradley, was burning up the road with his automobile when the machine turned turtle. The Doctor sprained his wrist and received a scalp wound, and a companion, J. T. Sandstrom, was badly bruised.

—Dr. William Hecker, of Watseka, a graduate of Northwestern University Medical School, 1902, has been arrested on the charge of murdering his wife, by drowning in Fox Lake, Wisconsin, August 29. Dr. Hecker denies the charge.

—Plans for the Nelson Morris Memorial Institute of Medical Research, opposite the Michael Reese Hospital, have been completed and the work will begin in a few days. The building will be 100 by 96 feet, and four stories in height.

—Dr. Haldane Clemenson, Chicago, is said to have been sentenced to life imprisonment September 14 by Judge McSurely, for the murder of his wife. Attorney Burres will take the case to the State Supreme Court in October, on a bill of exceptions.

—The Chicago Department of Health, in a recent bulletin, threatened to begin suits against physicians who do not report cases of typhoid fever promptly. Several cases were found due to lack of proper precautions taken in previous unreported cases.

—George W. Patton, Evanston, has donated \$500,000 to the Evanston Hospital Association. The gift creates the "Agnes and Louisa Patton Fund" and is to make up a part of the endowment fund of the institution only the income of which can be used.

—The formal opening of the Bennett Medical College as the Medical Department of Loyola University occurred at the new building, Ada and Fulton Streets, September 21. The college under its new auspices is a consolidation of the Bennett and Illinois Medical Colleges.

—Anesthesia claimed three victims in Chicago within three days, in August. Two deaths occurred in hospitals and the third in a dentist's office. In the latter case the patient was anesthetized by a physician twice with chloroform within a short time, for the extraction of teeth.

—The charges of graft made by the midwives against the attorneys of the State Board of Health are said to have caused a threat to sue one L. H. Rogers for slander. The latter thereupon offered to pay the cost of filing the suit and to give \$100 toward the employment of an attorney.

—Drs. Arthur R. Adams, John W. Hermetet, S. Frank Russell and Arthur K. Drake, have been appointed by the Board of Education of

Macomb to institute the medical inspection of the school children. On account of the financial condition of the city, the work will be done by these physicians gratuitously.

—Northwestern University announces that the requirements for admission to its medical school hereafter will be two years in college. Under the present conditions students registering for the medical department are required to show only one year of college work. The new plan is expected to go into effect next year.

—The Francis E. Willard Memorial Hospital has purchased a lot 48 by 125 feet, on Lincoln Street, adjoining the present hospital. The lot is improved with a two-flat building, which will be remodeled and used for the nurses, and will accommodate thirty. It is to be known as the Hobbs Home, in honor of Mrs. J. B. Hobbs, the recording secretary.

—The work of erection of the Iroquois Memorial Emergency Hospital at 87 Market Street, Chicago, has been commenced, and it is expected that the relief station will be ready to receive patients about Jan. 1, 1911. The cost of the building is estimated at \$30,000. On its completion it will be turned over to the city and will be operated by the Department of Health.

—A plaster cast model of the new Cook County Hospital, for which \$3,000,000 has been appropriated, shows the twelve proposed new structures, six medical buildings, two surgical buildings, one administration building, a detention building, a pathologic building and a morgue. Among the features of the plans submitted by the committee are roof gardens on the ward buildings and out door camps for tuberculosis patients.

—The *University of Chicago Magazine* for July contains an obituary of Dr. Howard T. Ricketts and an article in appreciation by Dr. Ludvig Hektoen. Dr. Hektoen says that important results in the battle against infections will follow the work of Dr. Ricketts, who died of typhus fever in Mexico in May, and he believes that the publication of the typhus researches of Dr. Ricketts and Mr. Wilder in their final form will settle the moot question regarding the disease.

—At a meeting held September 14, in Hull House Theatre, Chicago, the Chicago Health League, an organization to join all forces of the city, individual and municipal, in a co-operative effort for better sanitary living conditions, was formed. Dr. H. Cohen presided, the sanction of the department of health was given to the enterprise, and Health Commissioner Evans stated that an organization embodying all the functions of the numerous associations would tend to make more perfect sanitary conditions.

—Orthodox Jews raised a sum estimated at \$10,000 September 11, at the ground breaking ceremony for the establishment of the Maimonides Koshier Hospital, at South California and Ogden Avenues, Chicago. The chief privileges sold were turning the first clod of earth, placing the name on the golden scroll, and burning the mortgage. The building is to be six stories high, and will cost about \$175,000 and will accommodate about

175 patients, 75 of whom will be free patients. The first wing of the hospital is expected to be completed in less than a year.

—The fifteenth annual meeting of the Illinois State Conference of Charities and Correction will be held in Galesburg, October 22 to 25, inclusive. An elaborate program has been arranged to cover the field of activities of this organization. The subject of "Tuberculosis and What Illinois Can Do In The Battle Against It," will be presented by Dr. Woods Hutchinson, of New York. Mr. C. B. Ball, chief sanitary inspector of Chicago, will present a paper on "Bad-Housing, and Its Relation to Tuberculosis." Dr. Caroline Hedger, of Chicago, will speak on "Open Air Schools." Citizens of Galesburg have made elaborate arrangements for the entertainment of the visiting delegates.

—Announcement has been made of an invitation to the surgeons of North America, who are interested in clinical surgery, to visit the clinics of the leading surgeons of Chicago, during the two weeks, November 7 to 19, 1910. The various medical societies of Chicago will co-operate and have arranged for meetings during the two weeks, at which a number of the leading American and European surgeons will be present. Headquarters for this meeting will be maintained at the Hotel LaSalle, Madison and LaSalle Streets, where visiting surgeons will register on their arrival and receive cards of admission to the clinics and society meetings. At these headquarters will be bulletined daily the clinics, demonstrations, and other special attractions for the succeeding day. This will undoubtedly be a meeting of very great interest and full of instruction to the visitors. It will be participated in by the leading surgeons of the city, who have arranged to have their clinics at the various leading hospitals of the city.

PUBLIC HEALTH.

—The Chicago Woman's Club have called attention to the laxity in enforcing the ordinance requiring physicians and midwives to report births within thirty days, and suggest that the health department should enforce the law in this respect. One of the daily papers commenting on this action says that only vigorous enforcement of the ordinance and application of penalties for neglect to comply without discrimination will bring about a needed improvement in Chicago's vital statistics.

—Improved methods of sputum examination have been adopted recently in the Municipal Laboratory, Chicago. Sputum shakers of the Boston Board of Health type have been installed and the use of alkaline sodium hypochlorite as digestant has been introduced, resulting in the increase in the delicacy of the test and augmentation of the capacity of the laboratory. During the four months prior to the installation tubercular bacilli were found in 17.5 per cent. of the 1,017 specimens examined, and in three months following the installation 27.1 per cent. of tubercular bacilli, in 506 specimens of sputum.

—A few weeks ago Dr. George Thilo called the attention of the Department to the prevalence of lead poisoning in his neighborhood.

Since that time we have investigated carbonated waters with the following results:

Samples of carbonated waters examined (including products marketed as seltzer water, ginger ale, pops or sodas of various colors), 66.

Samples containing lead, 18.

Amount of lead present:

In 3 samples, $\frac{1}{4}$ gr. per gallon; in 3 samples, $\frac{1}{10}$ gr. per gallon; in 8 samples, $\frac{1}{20}$ gr. per gallon; in 4 samples, $\frac{1}{40}$ gr. per gallon.

Factories investigated, 30.

Factories marketing lead-containing waters, 8.

Factories ordered closed, 6.

Factories ordered to improve equipment or methods, 2.

The worst offenders were the "pops" sold in bottles stoppered by a stopper with a wire loop. This bottle is opened by pushing the rubber stopper in by the loop. From 50 to 90 per cent. of these stoppers are of lead. The manufacturers have since agreed to cease selling lead stoppers in Chicago, and the pop makers have been instructed to discontinue their use.

Another way in which lead gets into bottle-charged water is from lead shot, which is used in washing the bottles. The manufacturers have been so instructed, and many of them have agreed to discontinue the use of lead shot for bottle washing and to substitute iron or steel shot for such purpose.

All lead pipes in carbonating and soda water apparatus have been ordered out.

We are now testing the methods of soldering carbonators to see whether carbonated waters can pick up lead from such sources.—*From Bulletin, Chicago Department of Health.*

—One day this week a Chicago housewife decided that she would find out the bacterial count of ice cream made in the home kitchen. She took market milk regularly left by the regular milk man. The milk was delivered at 4 a. m. After breakfast, the house work being finished, she and the Swedish housemaid went into the kitchen, made the mixtures and heated them. They were then frozen in a small freezer costing \$1.25. At 3 o'clock in the afternoon a sample of the cream was sent to the Health Department for analysis; at 4:15 o'clock bacterial samples were taken and the cream was sent to another laboratory where check samples were taken at 4:30 o'clock. The counts were 260 and 190 per c.c. Compare this with the average of market samples—6,074,600 per c.c. The small milk dealer, the small ice cream maker or the neighborhood baker whose places are very clean and who make or handle their own product themselves or under their immediate supervision, will be able to make a cleaner product than is possible in the larger plants with hired workmen unless the standards of cleanliness of such plants are very high. There is a great deal of very clean ice cream being sold in Chicago, also much that is not clean. The proper course for the housewife to follow is to freeze cream in the home unless she knows that the place where she buys ice cream is clean, that the factory in which it is made is clean and that the product itself is clean. The proper course for the dealer to follow is to make his place very clean and to invite public inspection, thus making it easy to determine whether the ice cream is clean. He should advertise on his windows and elsewhere every proof that he maintains very clean premises, and that the cream which he sells is clean and wholesome. We have observed several such signs on windows of stores where ice cream is sold. The idea is excellent.—*From Bulletin, Chicago Department of Health.*

—Public drinking cups are dangerous; they are recognized by all sanitarians as excellent mediums for transmitting the germs of disease. Especially is this true in public and parochial schools where a large number of children are compelled to use the same cup. Statistics tell us that about one person out of sixty has tuberculosis; and among school children there are always those who have some of the communicable diseases in light form and these are communicated, without doubt, by the use of the common cup. So fully is this now understood that several states of the Union have passed laws abolishing the public drinking cup, and compelling railroads and public carriers to supply individual cups. The use of individual cups has also been advocated in public and parochial schools. It is doubtful, however, whether this would prove practicable. The better and safer plan, no doubt, would be the installation of what is known as "bubbling" cups with the water flowing over the rims all the time. Such cups would be safe and sanitary, and it is doubtful whether it would involve very much more waste of water than the present dangerous common cup. A cup which had been used in a high school for several months without having been washed was lined inside with a thick brownish deposit. How often have you seen drinking cups in similar condition. Under the microscope this deposit proved to be composed of particles of mud, thousands of bits of dead skin, and millions of bacteria. Some of this sediment was injected under the skin of a healthy guinea pig and forty hours later the pig died. An examination afterward showed that pneumonia germs had killed the pig. A second guinea pig was inoculated with some of the sediment from the same cup and developed tuberculosis. Careful inquiry showed that several pupils in this school from which the cup was taken were then suffering from consumption. The people of Chicago should start an agitation asking the school board to install the "bubbling" cups in all Chicago public schools. If this were done it would be a long step toward the prevention of disease.—*From Bulletin, Chicago Department of Health.*

HEALTHIGRAMS.

- Our one first duty—to keep well.
- It is easier to retain than to regain health.
- Good food, good drink and good air for good thinking and good working.
- Food and air, to make heat; water to circulate the material so that each tiny cell gets its proportion; exercise (work) to shake out the ashes—should be the motto of each one who wishes to be well and happy.
- Bathe the body daily—an active and clean skin relieves the lungs and kidneys of much work.
- Personal cleanliness is more than a fad or a luxury—it means health and life.
- Cleanliness costs little—sickness costs much.
- Build your reputation for civic pride in your back yard.
- We spend millions for tobacco—have we "money to burn?"—*From Bulletin, Chicago Department of Health.*

—Wash your hands! Wash them often! When we remember that every bit of food we eat is handled by human hands, we can better understand how important it is that hands should be clean. Some dirty hands are clean and some clean hands are dirty and dangerously dirty. This means that some kinds of dirt are harmless and others are not. Most often it is the invisible dirt that is dangerous to both life and health. The farmer's hands may be grimy and dirty from the soil of the farm; the plasterer's hands may be covered with lime and mortar; but in neither case would the dirt be very dangerous. The germs of disease are everywhere. It is believed by sanitarians that unclean hands spread more typhoid than is carried by flies. Thousands of cases of this terrible disease have been traced directly to cooks, cooks' helpers, bakers, dairy people and those who have handled or prepared food with unclean hands—hands that were polluted with the germs of typhoid. Scientists tell us that if a dozen men and women only dip their hands into a basin of water upon examination it will be found to be swarming with colon bacilli. And these average hands are those that handle our bread, our meat, our fruit, our pastry, and, in fact, everything we eat and drink. Many persons continue to be carriers of typhoid for years after they have themselves recovered from the disease. A noted physician tells us of a case where a mother had successively infected thirteen members of her own family with typhoid after her own recovery, and that for thirty-one years she was still a carrier of the disease. And then he adds: "Plain common sense can do nothing but trace it through her dirty hands to the food she cooked and served." It has been demonstrated that 78 germs of typhoid placed in fresh milk became 60,000 in twenty-four hours, 10,300,000 in forty-eight hours, and 480,000,000 in seven days. This shows us how easy it is to infect milk or food of almost any kind with dirty hands. So, too, we can and do poison our own food when we fail to thoroughly wash our hands before each meal. And because this is true, we should wash our hands OFTEN and wash them CLEAN.—*From Bulletin, Chicago Department of Health.*

SCHOOLGRAMS.

—Let the first lesson be: How to keep well.

—You'll be brighter, learn more and keep in better health if your teacher will keep the windows of the school room open. Bad air makes a sluggish brain.

—"Do unto others as you would have others do unto you"—meaning: Don't carry disease germs to school and cause sickness and perhaps death among your playmates. If you have a contagious disease at home keep entirely away from all other children. Stay at home if you have a sore throat.

—"Skidoo" from the boy or girl with "a little sore throat."

—A "little sore throat" in one little child may cause a big lot of trouble for many other children. Many "little sore throats" are in reality diphtheria.

—Wash the drinking cup thoroughly before putting it to your mouth. The child who used it just before you may have left the germs of disease on it. Wash the germs off.

—Keep that pencil out of your mouth—it may have scarlet fever, diphtheria or typhoid fever germs on it.

—Swapping gum, swapping apples and swapping candy are about the dirtiest things—and the most dangerous things—that a child can do. Don't be that dirty.

—Keep your hands clean. Soap is your good friend—dirt is your worst enemy.

—Eat very little candy—treat your stomach well and you'll live longer.

—Never buy candy or fruit at an open stand on the street. Flies have left all kinds of dirt on it and dirt from the streets has been blown upon it.

—When you play, play out of doors—but never play in dusty places.

—Don't run to school—especially just after eating. Start in time so that you will not have to run.

—Be well and you'll be happy—even in school.—*From Bulletin, Chicago Department of Health.*

—The season for the last few months has been particularly favorable for the spread of typhoid fever infection in the rural districts from which the food supplies of Chicago come. The recently somewhat increased rate of prevalence of typhoid in Chicago is due, certainly to some extent, to infection introduced by foods and persons from these rural districts. Of the foods brought in from the country milk is the one most liable to cause infection, because in milk typhoid germs multiply at a very rapid rate. If a very small particle of matter containing only one or two typhoid germs finds its way from the faulty privy through dirty hands, flies, or the polluted well or stream, into the milk can at the dairy farm, the one or two germs may number millions before that milk reaches the consumer. At this time it is particularly desirable to use no milk that has not been properly pasteurized. If the householder has the slightest doubt as to the proper pasteurization of milk at the dairy, he should make sure by pasteurizing the milk at home. That milk is from tuberculin tested cows is no indication that the milk is free from the germs of typhoid fever.—*From Bulletin, Chicago Department of Health.*

MARRIAGES

THOMAS P. LYNAM, M.D., to Miss Mary Ellen Boyle, both of Chicago, September 14.

FREMONT C. KNIGHT, M.D., Waukegan, Ill., to Miss Iva Fisher, of Chicago, September 6.

DEATHS.

ROBERT EMERY, M.D., Victoria College, Toronto, 1857; one of the oldest practitioners of Peoria; died suddenly in Dunlap, Ill., August 24, aged 82.

CHARLES T. BUCKHOLTZ, M.D., Homeopathic Medical College of Missouri, St. Louis, 1874; died at his home near Murphysboro, August 30, from angina pectoris, aged 69.

WILLIAM JEFFERSON EASLEY (license, years of practice, Ill.); formerly of Raymond; died at the home of his daughter in Decatur, August 7, from senile debility, aged 82.

LEVI SPENCER WILCOX, M.D., Long Island College Hospital, Brooklyn, N. Y., 1873; twice mayor of Champaign; died at the California Hospital, Los Angeles, August 5, aged 63.

JOSEPH J. TREMBLAY, M.D., College of Physicians and Surgeons, Chicago, 1895; a member of the American Medical Association; died suddenly at his home in Moline, August 23, from heart disease, aged 48.

HERBERT MARCUS GOODMAN, M.D., Rush Medical College, 1909; an intern at Cook County Hospital; died at the home of his father in Chicago, August 19, after an operation for carcinoma of the pharynx, aged 27.

MARTHA A. RICHARDSON, M.D., College of Physicians and Surgeons, Keokuk, Iowa, 1896; of Canton; a member of the American Medical Association; died in the Proctor Hospital, Peoria, August 25, from chronic nephritis, aged 39.

SAMUEL SCOTT SALISBURY, M.D., Western Reserve University, Cleveland, 1854; a member of the Illinois State Medical Society; for nearly half a century a practitioner of Tolono; died at his home, August 22, from senile debility, aged 81.

FOSTER FRUTCHEY, M.D., Medico-Chirurgical College of Philadelphia, 1891; a member of the Illinois State Medical Society; professor of operative surgery and applied anatomy in Illinois Medical College; died at his home in Chicago, August 28, from meningitis, aged 44.

FRANK FLEURY (years of practice, Ill., 1887); of Springfield; from 1881 to 1885 secretary of the State Board of Pharmacy; secretary of the Illinois State Pharmaceutical Association in 1880; died at the home of his daughter in Springfield, August 29, from uremia, aged 68.

ERIC A. DAVIDSON, M.D., Bennett College of Eclectic Medicine and Surgery, Chicago, 1898; Rush Medical College, Chicago, 1901; a member of the Illinois State Medical Society; professor of medicine in Bennett College of Eclectic Medicine and Surgery, Chicago; died at the home of his brother in Berkeley, Cal., July 30, aged 51.

JAMES NEVINS HYDE, M.D., University of Pennsylvania, Philadelphia, 1869; a member of the American Medical Association; twice president of the Chicago Dermatological Association; second president of the American Dermatological Association; and an honorary, active or corresponding member of the leading dermatologic associations of Europe; assistant surgeon in the navy for two years during the Civil War, and for three years thereafter; for thirty-one years professor of skin, venereal and

genito-urinary diseases in Rush Medical College and secretary of the council administration and faculty of the institution; professorial lecturer on dermatology at the University of Chicago since 1902; a notable contributor to the literature of dermatology; and the author of a standard text-book which is already in its eighth edition; dermatologist to the presbyterian, Augustana, and Michael Reese hospitals, and the Chicago Orphan Asylum; a member of the Mayflower Society, the Society of Colonial Wars, and the Sons of the American Revolution; one of the



JAMES NEVINS HYDE, M.D.

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most prominent specialists on skin and venereal diseases of America; died suddenly September 6, at his summer home, Prout's Neck, Maine, aged 70.

Dr. Hyde was one of the best known American medical men. Not only was he highly regarded by his coworkers in his chosen field of professional work on account of that work, but because of his interest in medical affairs and the medical profession generally. All who knew him loved him for his liberality and for his kindness toward all who approached him, young men especially.

Book Notices.

SURGICAL AFTER-TREATMENT. By L. R. G. Crandon, A.M., M.D., Assistant in Surgery at Harvard Medical School. Octavo of 803 pages, with 265 original illustrations. Philadelphia and London: W. B. Saunders Company, 1910. Cloth, \$6 net; half morocco, \$7.50 net.

Dr. Crandon has brought to the consideration of the after treatment of surgical cases that sixth common sense which is too often neglected in the practice of surgery. He does not claim infallibility, and makes the following suggestion in his preface, which will be appreciated by every thoughtful practitioner. Such frankness will attract attention to this work and we have no doubt will make it popular wherever it is read.

"Every procedure herein advised has stood the test of practice and will safely do for the reader until, from his own experience, he develops his own methods. The fact that each surgeon eventually grows into a technic peculiar to himself, and that many differing ways are successful, should make us liberal in spirit and constantly alert for new truth. No surgical life is so brief but that it has seen new methods appear, vaunted as perfect, pursued for a time, only to fade away."

DISEASES OF THE STOMACH AND INTESTINES. By Robert Coleman Kemp, M.D., Professor of Gastro-Intestinal Diseases, New York School of Clinical Medicine. Octavo of 766 pages, with 279 illustrations. Philadelphia and London: W. B. Saunders Company, 1910. Cloth, \$6 net; half morocco, \$7.50 net.

Dr. Kent's volume, which is dedicated to Wm. H. Thomson, the grand old man of clinical medicine in the city of New York, is a volume of which Dr. Kemp may well be proud. He has taken full advantage of modern employment of photography to demonstrate methods, their diagnosis and treatment. Visceral displacements, which have recently assumed their important position, are especially described, and their symptoms, diagnosis and treatment, notably by mechanical methods, are fully considered. The examination of the stomach by the Roentgen rays and radium trans-illumination is considered, as well as trans-illumination of the intestines and electric transposition of the lower bowels. The work is well worthy of place in the library of every practitioner.

GYNECOLOGICAL DIAGNOSIS. By Walter L. Burrage, A.M., M.D. (Harvard). Fellow of the American Gynecological Society; Member of the Obstetrical Society of Boston; Consulting Gynecologist to St. Elizabeth's Hospital; Formerly Visiting Gynecologist to St. Elizabeth's and Carney Hospitals; Electro-Therapeutist and Surgeon to Out-Patients, Free Hospital for Women; Clinical Instructor in Gynecology, Harvard University, and Instructor in Operative Gynecology in the Boston Polyclinic. Two hundred and seven text illustrations. New York and London: D. Appleton & Company, 1910.

Dr. Burrage's work, which is constructed somewhat on the plan of the lamented Dr. Winter, will be found a welcome aid by many practitioners in their work. It is distinguished by its clearness and completeness. The photographs and drawings have been a help in use of illustrating the subject of the text, and it will be found a valuable guide in the diagnosis and treatment of the diseases which it treats.

DUODENAL ULCER. By B. G. A. Moynihan, M.S. (London), F.R.C.S., Senior Assistant Surgeon at Leeds General Infirmary, England. Octavo of 379 pages, illustrated. Philadelphia and London: W. B. Saunders Company, 1910. Cloth, \$4 net; half morocco, \$5.50 net.

Mr. Moynihan has brought to the consideration of duodenal ulcer all the knowledge and skill which he has used to such great advantage in the consideration of other diseases of the digestive tract. No one without a large operative

experience could compile such a work, and it is well for us to know that most of the diseases herein described have been for ages attributed to functional diseases of the stomach and intestines. He not only advises the best surgical means for curing the disease, but suggests that surgery will be of benefit to the patient and practitioner, by showing the best means of treatment medically.

HOOKWORM DISEASE: Etiology, Pathology, Diagnosis, Prognosis, Prophylaxis and Treatment. By George Dock, A.M., M.D., Professor of the Theory and Practice of Medicine, Medical Department Tulane University of Louisiana, New Orleans, and Charles C. Bass, M.D., Instructor of Clinical Microscopy and Clinical Medicine, Medical Department Tulane University of Louisiana, New Orleans. Illustrated with 49 special engravings and colored plate. St. Louis: C. V. Mosby Company, 1910.

Drs. Dock and Bass have made of this disease a book of surpassing interest, the reading of which has all the interest of a novel. In the preface to the work the following remarks are made which we deem so important that we give them in full:

"No more striking example of the transitory state of medical knowledge can be advanced than the proof brought within the last few years, not only that hookworms exist as human parasites in a large part of the country, but that they may with reason be looked upon as among the most important causes of diseases of the South in extent, in destruction of life, and in leading to physical and mental degeneration. The fact that the parasites in the United States belong to a new species is a most important one and very suggestive in its bearing on medical zoology. In many parts of Europe hookworm disease is one of the most important economic problems. Immense labor and expense have been devoted to the measures for its repression in Belgium and Germany especially, where it seriously affects the mining industry.

"The study of hookworm disease in America has shown the heavy load that endemic disease lays upon the country. Largely due to it, a region that should be most fertile lies relatively uncultivated; a population derived from the best colonizing blood ekes out a miserable existence and is doomed to extinction unless it is soon relieved of its infection. Thanks to the painstaking labors of zoologists and physicians much has been learned of the disease and its parasite. Physicians and hygienists have realized that the evil, preventable as it is, must stop, and medical men, administrative officers and private philanthropists are now working actively to that end."

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ORIGINAL ARTICLES

DISLOCATION OF ATLAS *

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I wish to call your attention briefly to a subject in which comparatively little progress has been made by modern surgery and one in which there is great difference of opinion as to its promise for the future. Surgery of the spinal column and of the spinal cord have been shunned by most writers and one does not receive the encouragement which he seeks when he consults the average text-book for help along these lines. On the other hand we find here and there the record of splendid operations and brilliant results. In May, 1902, I collected the histories of 551 cases¹ of injury to the spinal column. These were divided into two groups, those treated by operative means and those treated without operation. While the average mortality will always be high and many case histories are indefinite, a comparison of these two groups seemed to show 25 per cent. more recoveries of life and function among those operated on than among those not operated on. There were 166 fractures and dislocations in the cervical region in this group and 55 or 33⅓ per cent. were reported as recovered. Due allowance must be made for the tendency to report the favorable cases.

Dislocations are more frequent in the cervical region because the articular processes are placed in a more horizontal position, and here we find the greatest flexion and extension.² Of 394 cases of spinal injury collected by Ashurst, 29 were unilateral dislocations in the cervical region and the fifth cervical was most frequently dislocated. Among these cases there were nine deaths. In 26 cases collected by Maigne, nine were fatal. Dislocations above the origin of the phrenic nerve were most fatal. These are rarely cases of simple dislocation, but are complicated

* Read at the Sixtieth Annual Meeting of the Illinois State Medical Society, held at Danville, May 17-19, 1910.

1. Illinois Medical Journal, November, 1902.

2. Bryant and Buck, vi, 432.

by other injuries. Keen found³ that 60 per cent. of cases classed as fractures or as dislocations were fracture-dislocations, while simple fractures and simple dislocations comprised about 20 per cent. each. Injuries to the atlas are much more fatal than to any other part of the spine. Gnrllt reported eleven cases⁴ of fracture of the atlas and axis. Two died immediately, two died within an hour and the others lived from one to thirteen days. He attributes the high mortality to the proximity of the injury to the medulla. He reports fracture of the odontoid process in only one case which is at variance with the cases reported by Corner,⁵ who reported eight cases in which the character of the injury was confirmed by autopsy and in six of the eight cases the odontoid process was fractured and all of the eight cases had complications in addition to the dislocation.

This paper will be confined to a report of a recent case and to a discussion of some of its more important features.

Personal History.—Case No. 6,728; male; aged 20 years; single; American; horse breaker by occupation; lived in the country; no education; poor home surroundings; unrestrained habits.

Entered Passavant Hospital Sept. 24, 1909. Referred by Dr. H. W. Garrison, of Hillview, Ill.

History of Injury.—About three weeks before, a horse which he was riding, stumbled and fell, throwing him over its head in such a way that he struck with the principal weight on his forehead. Says he felt somewhat stunned for a few minutes and heard and felt something "snap" in his neck, had to support head with hands if he made a sudden movement and for this reason he could not get back on his horse, but was able to walk home several miles, although he had considerable pain in the occipital region. Could not turn his head from side to side and could not open his mouth more than half an inch. He found that his swallowing was interfered with by something which pushed forward the front part of his neck.

Etiology.—Such injuries are usually caused by a fall on the head or a blow on the head, but may be due to sudden turning of the head. The theory is advanced on good authority that the tendons in this region only bind the vertebrae together loosely and that the articular surfaces between the atlas and axis being quite flat and unprotected by bony prominences, excepting the odontoid process, maintain their relations by the action of the muscles.

Corner⁶ speaks of the ligaments as being "lax and loose" and says "our heads are held firm by muscular effort and not by any other means," and if this is abolished "the ligaments allow the head to rotate 30 degrees to either side of the middle line." (See Fig. 1).

This gives any violence a "flying start" and makes these joints especially liable to injury. If these muscles are caught off guard, so to speak, a rotary dislocation may occur without violence. There are several reasons why I have found it difficult to accept without some modification this view of the function of the tendons.

3. Dennis: Surgery, vii, 811.

4. Bryant and Buck, vi, 430.

5. Annals of Surgery, January, 1907.

6. Ibid.

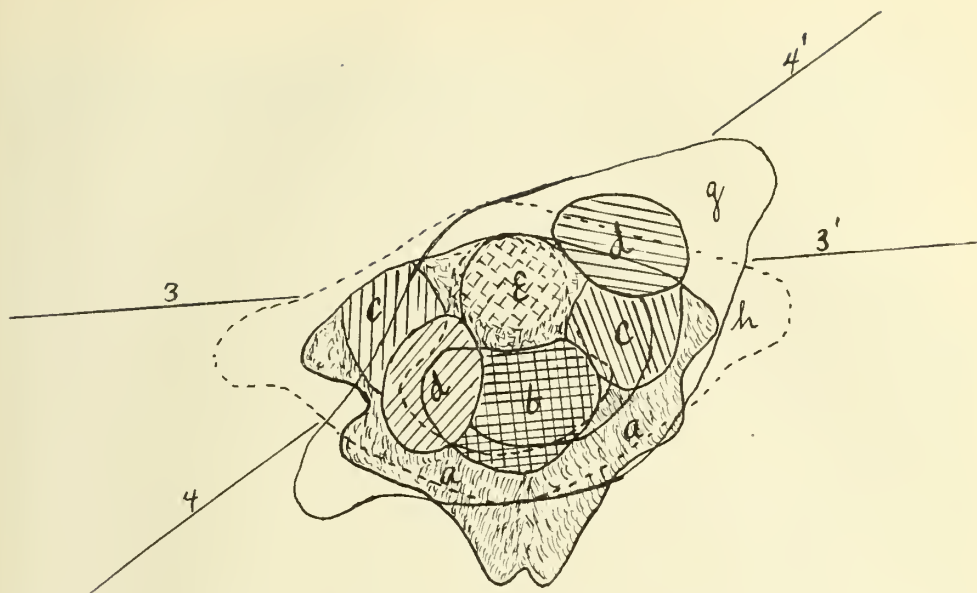


Fig. 1.—Diagram illustrating normal rotation of the atlas upon the axis with odontoid process as a center to the limit of 30 degrees. a, Lamina of the axis; b, spinal foramen; c, upper surface of articular processes of axis; d, lower surface of articular processes of atlas; e, odontoid process; g, lateral process of atlas when rotated thirty degrees; h, lateral process of atlas when vertebra is in repose; 3-3', line through center of odontoid process with atlas in repose; 4-4', line through center of odontoid process when atlas is rotated 30 degrees.

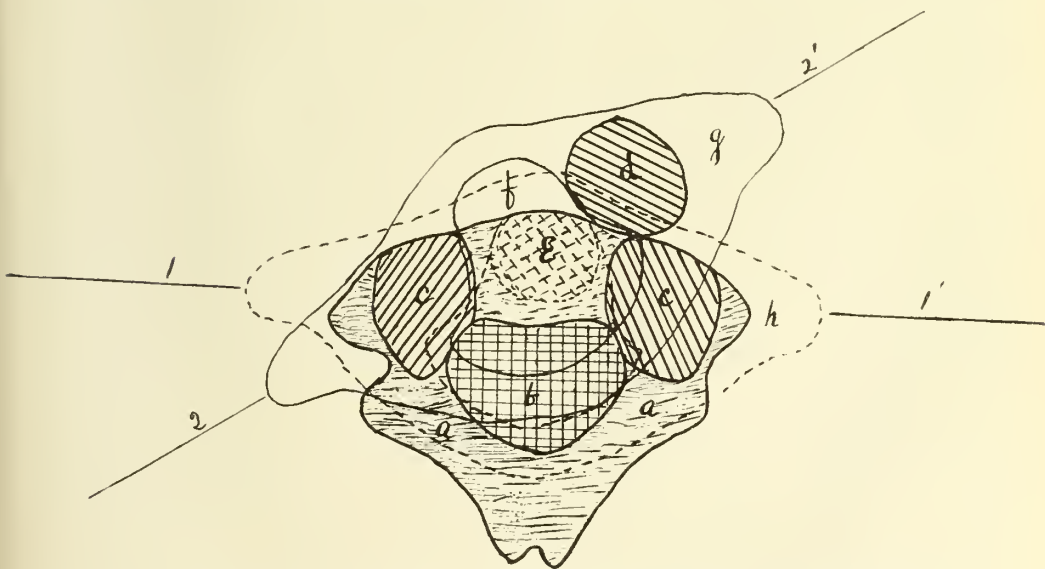


Fig. 2.—Diagram illustrating unilateral rotary dislocation of the atlas upon the axis where one articular process is used as the center of rotation. a, Lamina of axis; b, spinal foramen; c, upper surface of articular processes of axis; d, articular process of atlas carried forward thirty degrees by rotation, with the other process as the center; e, odontoid process; f, distance which the anterior arch of the atlas is carried from the odontoid process in such dislocation; g, position of lateral process of rotated atlas; h, position of lateral process when atlas is in repose; 1-1', line through center of lower articular surface of atlas; 2-2', line through center of lower articular process of atlas when the other articular process is rotated 30 degrees.

The condition of laxity of the ligaments binding these joints is not peculiar to the spine, but is common to all joints. A normal rotation of 30 degrees must have the odontoid process for its center and is not greater than exists in other joints and within this range the articulating surfaces are still well intact and no dislocation or distortion can occur. A dislocation cannot take place without a rupture of ligaments and this is not accomplished without violence. (See Fig. 2.)

It would seem probable that instead of all muscles being caught off guard that one group of muscles of the neck act alone, and with such violence as to rupture the ligaments and allow the articular surface of the atlas to pass beyond its usual range. Complete dislocation of one articular surface of the atlas cannot occur without either a rupture of the check ligaments of the odontoid process or a fracture of the process itself.

Of the eight cases reported by Corner⁶ and confirmed by autopsy, the odontoid process was fractured in six cases. I have tried experimentally, in the dog, to produce a dislocation of the atlas. With all the muscles of the neck as completely relaxed as could be by anesthesia, two of us, each using all the strength of our two arms, found it impossible to produce a dislocation or fracture in a fifty-pound dog.

In an analysis of thirty cases reported recently as to the cause, that of Lambotte⁷ is the only one which seems to have occurred without violence other than that produced by muscular action. In this case the injury was reported to have been "produced by a simple movement of extension of the head, while the young woman was sewing." Paralysis did not come for a year and the patient lived fourteen months after the injury. Post-mortem showed the odontoid fractured across its base and the right articular process dislocated forward with the check ligaments intact.

Symptoms.—The next day after the injury my patient consulted a neighboring physician, who made a diagnosis of severe strain with swelling and thought with a little care he would soon be all right. For three weeks he went about visiting among the neighbors, waiting for conditions to improve so that he could return to work. He could walk with tolerable comfort. When there was any unusual action or strain or when he wished to get up from bed or from a reclining posture, he had to support the head with the hands, but when erect he could walk long distances without distress. He reported that he frequently walked as far as ten miles a day, but could not ride horseback or in a wagon or buggy. His pain in the occipital region continued, he tired more easily than before the injury and the stiffness and swelling did not disappear.

Several writers lay special emphasis on the absence of spinal symptoms in many of these cases. Gibson reported⁸ such a case in which 23 days after the supposed reduction of the dislocation the patient raised up in bed and fell back dead. We should be very careful in our diagnosis and very guarded in our prognosis.

After waiting three weeks my patient consulted Dr. H. W. Garrison of Hillview, Illinois, who made a diagnosis of dislocation or fracture of a cervical vertebra and sent him on to the hospital.

7. *Ibid.*

8. *Lancet*, 1885.



Fig. 3.—Skiagraph of region of the occiput, atlas and axis, showing the position of the dislocated atlas and its relation to lower cervical vertebrae, occiput and jaws in case reported.

At this time he presented the symptoms and deformity mentioned above but with absence of motor, sensory or reflex symptoms. He complained of pain on moving the head and at times complained of frontal headache. A curious symptom was that pushing his feet against the foot board of his bed seemed to relieve the headache temporarily. He complained of pain in the muscles of the neck, all of which were held rigid and tense and sometimes there was twitching of the muscles of the right side of the face. At times he had a pain which began at the level of the thyroid crest which pressed forward and extended around to left ear. The face was held slightly to the left and could be rotated a little to that side, but not at all to the right, while the head was slightly tilted to the right. This tilting of the head was greater than it appeared as the bending of the lower vertebrae compensated the deformity at the junction of the atlas and axis. He entered the hospital in the evening, was put to bed. Appetite good; bowels constipated; pulse 88; respiration 16; temperature 98.6. The first night he slept quietly and comfortably from 8:30 p. m. to 6 a. m.

Diagnosis.—The next morning after making a careful examination, a diagnosis of dislocation of the atlas with probable fracture was ventured. The skiagraph (See Fig. 3), which I made the next day, fully confirmed this diagnosis. This was taken with the patient lying on his left side and showed the forward dislocation of the atlas and gives a reasonable presumption of fracture of the odontoid. It would hardly be possible to get such a picture with the odontoid intact. I have purposely presented a full-sized cut of the skiagraph. Neither the plate nor the print has been retouched. This shows the great value of the *x*-ray in the diagnosis of such lesions.

A plaster splint was made to fit the back, shoulders, neck and back of head, which was held in place by bandages. This kept him rigidly in one position and made him more comfortable.

The diagnosis of fracture, or dislocation, or a combination of the two, deserves careful consideration. There is usually a history of violence as of a fall striking on the forepart of the head. More rarely this violence is slight. In dislocation of the atlas, the manner of receiving the injury is of prime importance. In looking over a large number of case histories, we find that the violence was applied to the head either at one side or on the forehead, producing a violent flexion or twist. More rarely the blow is on the neck.⁹

In fracture or dislocation of the atlas or axis the "diagnosis may be made by use of the *x*-ray,"⁹ which should always be employed.¹⁰ There are few places where the *x*-ray is more applicable and important.

In arriving at a diagnosis we find on inspection that there is a conspicuous asymmetry in the two sides of the neck, and in dislocations or fracture-dislocations of the atlas, the chin is thrown forward and downward, and the head is tilted to the opposite side from that which the chin points. The line of the spinous processes should be followed, and deviation at the point of injury will usually be found. If the dislocation of the atlas is sufficient the distance of the spinous process of the axis from the occiput will be increased and the examining finger will drop into a notch or abnormal depression between the spinous process of the axis and the base of the skull made by tilting of the arch of the atlas up against the foramen magnum. By the process of rotation and forward dislocation of one articular process of the atlas, its lateral process is

9. Bryant and Buck, vi, 431.

10. Mixer and Osgood: *Annals of Surgery*, February, 1910.

easy to outline between the angle of the jaw and the mastoid process. If the spinous process is abnormally prominent, fracture of the odontoid should be suspected.¹¹ In forward dislocation in the upper cervical region the condition of the pharynx should be examined. Sometimes the forward dislocation of the lateral process interferes with the action of the jaw to such an extent that the mouth cannot be opened sufficiently to admit the examining finger.

The head may be retracted and the occiput drawn down between the shoulders and the chin thrown forward in dislocation of the lower or mid-cervical region,⁹ but in dislocation of the atlas without fracture, excepting of the odontoid process, that vertebra is tilted forward as its articular process drops into the intervertebral notch of the axis and the chin is thrown down as the head comes forward and the occiput necessarily goes upward. If there is fracture of either the atlas or axis, excepting the odontoid process, these relations may be changed. Usually the muscles of the neck become tense and prominent, and hold the head fixed and rigid. Rarely the head has been reported as freely movable,⁹

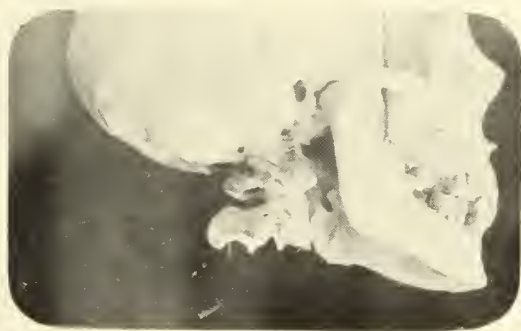


Fig. 4.—Normal relation of the occiput, atlas, axis and jaws.

but it is difficult to understand how there can be any serious dislocation with displacement, and the head remain freely movable. When the head is moved the patient complains of a "warm tingling sensation" through the neck and shoulders and down the ulnar sides of the arms,⁹ on one or both sides, depending on whether the dislocation is unilateral or bilateral.

In these injuries deformity may be present to a marked degree, or some authors have stated that it may be impossible to discover the slightest displacement of the spinous processes.⁹ It is a mistake to depend on the position of the spinous processes as a guide to the diagnosis, especially in fracture-dislocation of the atlas and axis. There are other distortions, deformities and positions which are far more important. In these injuries the patient has a very characteristic way of holding his head. Notwithstanding the fact that the muscles are holding the head and neck perfectly rigid, the patient will take his head carefully in both hands

11. Mixer and Osgood: *Loc. cit.*

and supplement the action of the muscles by supporting the head before he will allow himself to be turned over or raised, although after he gets settled into the upright position, he will then take the hands down as long as the head is kept still.

So far we have only considered those phases of diagnosis which deal with the bony column. Of more importance are those which deal with the spinal cord. The injury to the cord may be the only positive localizing element. These are probably of less value in injuries of the atlas than in any other region because cord injury at this point will probably mean injury to all segments of the cord. We will not discuss the various disturbances which may arise from injury to the cord at this level and we will not take up the question of injury to nerve structure and the possibility of repair. Here we have cases widely divergent in their symptoms, arising from injury to nerve structure.

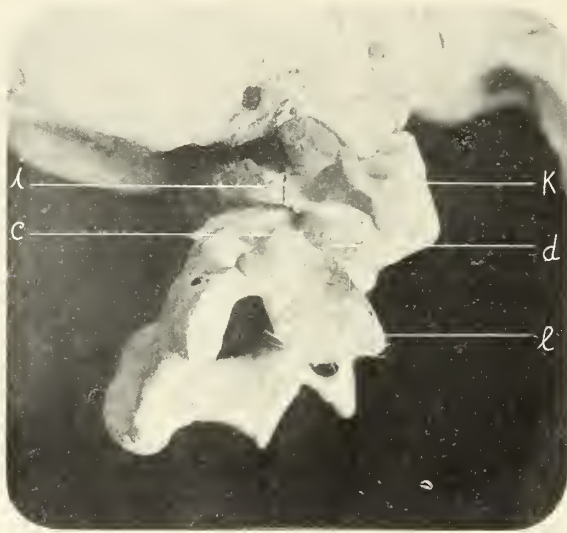


Fig. 5.—Relation of the occiput, atlas and axis in a unilateral rotary dislocation of the atlas with fracture of the odontoid; i, posterior arch of atlas; k, anterior arch of atlas; d, articular process of atlas rotated forward into intervertebral notch; l, lower surface of body of axis.

Treatment.—My patient was kept under observation for three weeks during which time the conditions were stationary.

On Oct. 15, 1909, I made an attempt to reduce the dislocation, first by manipulation, extension, flexion and rotation, without success, and then by the open method. A median incision was made extending well up on the occiput and down to the spinous process of the sixth cervical vertebra. This gave a free exposure of the region of the atlas and axis. (See Fig. 4.)

The spinous process of the axis had been fractured near the tip and the lamina on the right side of the axis had been fractured. Both of these fractures were firmly united in the seven weeks which had intervened. The right lateral process of the atlas was rotated forward into the intervertebral notch. (See Figs. 5 and 6.)

The posterior arch of the atlas was thrown upward almost against the edge of the foramen magnum and forward across that opening. (See Fig. 7.)

After securing free exposure of all parts, an attempt was made to effect a reduction. A heavy gauze retractor was fastened to the scalp with a tenaculum forceps so that an assistant could use his full strength in making extension. A heavy braided silk ligature was passed around the posterior arch of the atlas and an instrument passed through the loop to make a handle with which I could use the full strength of one hand in making traction on the atlas. While an assistant passed a thumb into the patient's mouth and made pressure on the projecting anterior arch of the atlas, using the exposed articular process of the axis as a fulcrum, I tried to place the edge of a chisel under the base of the posterior arch of the atlas in such way as to lift the depressed articular process up while traction was made in every direction. We combined rotation with traction and as far as the position of the patient would admit, we used flexion, but all without avail. There was some slight change in the position of the vertebra, but only in the amount of rotation. We were finally forced to abandon our effort and close the wound. A new plaster cast was applied to the head, neck, shoulders and back and the patient returned to bed in good condition. The patient went through the operation without incident as far as position and anesthetic were concerned



Fig. 6.—The relation of the odontoid to the body of the axis in unilateral rotary dislocation of the atlas with fracture of the odontoid. The posterior arch of the atlas has been removed; e, fractured odontoid process carried forward with anterior arch of atlas; l, upper surface of body of axis from which odontoid process was fractured off; c, upper articular process of axis beyond which the articular process of the atlas has been rotated and dislocated.

and made an uneventful recovery. He was kept in the cast for six weeks, at which time he was able to walk about comfortably, but he did not leave the hospital until December 12. He seemed perfectly strong and well, except for a stiff and deformed neck. (See Fig. 8.)

Several cases are recorded where surgeons have failed to reduce such dislocations after having direct access by open operation to the atlas and axis. Walton¹² has certainly minimized the difficulties of the application of his method of combined extension, flexion and rotation for the reduction of dislocations of the atlas. The method is admittedly not applicable where the odontoid process is fractured, which at once eliminates probably eight-tenths of the cases and some of those in which

12. Boston Med. and Surg. Journal.

reduction of dislocation is supposed to have been effected were those where there was reposition of fractured bones and in which manipulation may do more harm than good. Mixer and Osgood in reporting their case¹³ say: "With an aneurism needle, a stout braided silk soaked in compound tincture of benzoin was passed about this posterior arch, between it and the spinal cord. While forward pressure on the anterior arch was exerted through the pharynx, traction was made on the posterior arch. There was firm resistance to replacement and only a slight amount of reposition was accomplished."

Pitche¹⁴ exposed the atlas and axis and made a direct effort to reduce the forward dislocation of the atlas, but reports that "careful efforts to correct the displacement were futile."

On January 22, 1910, my patient returned to the hospital in a debilitated condition. He had walked a considerable distance to his train; was on the cars for 40 miles with one change and walked two blocks from the station to the hospital. He reported that he had felt well until four or five days before, when he attempted to rise from a chair, staggered and felt weak; had difficulty in using his legs and walked with a quick jerky movement; his fingers felt stiff and

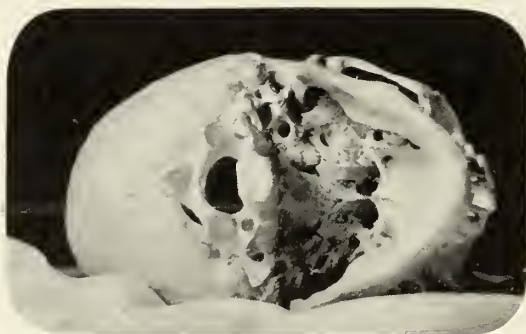


Fig 7.—Normal relation of the occiput, atlas and axis, showing the spinal foramen and the relation of the foramen magnum.

he could not swallow so well; complained of a constant frontal headache and bowels obstinately constipated and there was tendency to urinary retention. There was evident muscular weakness and hyperesthesia of all surfaces below the nipples. *Tâche-cérébrale* present, pupils equal and react promptly. Reflexes in the triceps, wrist, knee and Achillis increased. No ankle clonus and no Gordon; Babinski positive on both sides. These symptoms gradually increased until at the end of two weeks a slight tap on the patella tendon would produce clonic spasm of the leg. Ankle clonus could be easily elicited and tapping on the abdominal wall would produce tonic spasm. Fibrillary twitching on striking various muscles of the legs. He began to have difficulty in getting hands to head and was unable to stand alone. The hyperesthesia of the abdominal wall and of the lower extremities increased and over this area cold produced a stinging sensation and he said the warm test tube felt cooler. His tactile sense was not disturbed. When feet and ankles are unsupported there is constant patellar clonus. The recti and pectorales majores when struck, exhibit tonic spasm. On one occasion he had a muscular spasm which started in the fingers of the right

13. *Annals of Surgery*, February, 1910.

14. *Ibid.*

hand and extended to the muscles of the arm and neck and there was a quivering of the muscles of the scalp. Left side presented the same phenomena, beginning after the right. Soon there was spasm of the abdominal muscles extending into the lower extremities. Had no sensation of coldness. These symptoms lasted about thirty minutes and were followed by a headache, which was more severe than any before and became permanent except when relieved by drugs or when asleep. The symptoms indicated that degeneration of the cord was in progress. After he returned to the hospital, one of his most constant complaints was of a

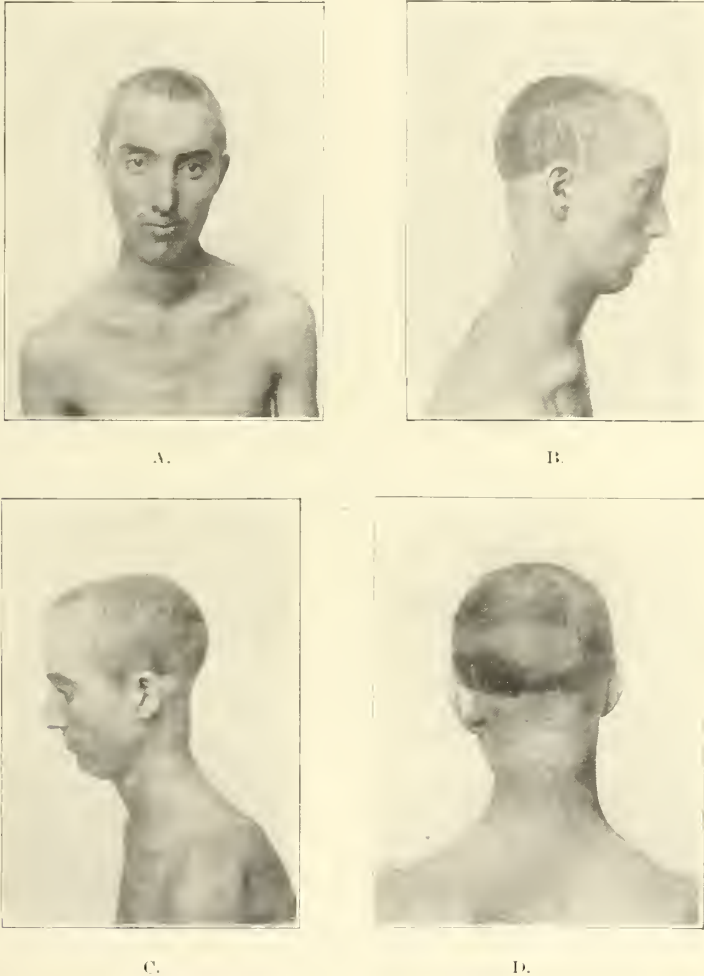


Fig. 8.—Showing position of the head and neck in case reported. A, Anterior view; B, right profile; C, left profile; D, posterior view showing line of incision.

fulness and oppressed feeling in the abdomen. There was never any serious difficulty in controlling the evacuations of the bladder, excepting on two occasions he had desire to urinate but could not evacuate for several hours. It was never necessary to catheterize. There was obstinate constipation. The prominent symptoms were progressive muscular weakness, increased reflexes, hyperesthesia, a feeling of numbness in the extremities, a feeling of depression in the abdomen

and at times in the chest and constant frontal headache. It was perfectly evident that the patient would die if something could not be done to stop the degeneration of the cord. On urgent solicitation I made a second operation for the purpose of removing the pressure from the cord and if possible, putting a stop to the degenerative process. The same incision was made as at the first operation and again the arches of the atlas and axis were thoroughly exposed. The posterior arch of the atlas was found to be pressed very tightly against the cord. That portion of the arch between the grooves for the vertebral arteries was removed. No effort was made to deal with the dislocation. The wound was closed layer by layer and after applying dressings, patient was placed in a plaster splint which had been made the day before. This operation was made under great difficulties on account of the tendency to respiratory failure caused by degeneration of the fibers supplying the phrenic nerve. It was necessary to resuscitate the patient several times during the operation, and although he went back to bed in fair condition he died four hours later from respiratory failure, all efforts at artificial respiration having no effect.

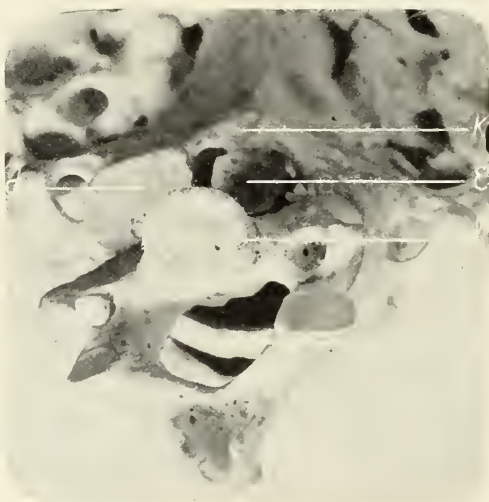


Fig. 9.—Occiput, atlas and axis in unilateral rotary dislocation of the atlas, showing the relation of the posterior arch of the atlas to the spinal foramen; d, lower articulating surface of rotated and dislocated atlas; e, fractured end of odontoid process, carried forward with anterior arch of atlas; i, posterior arch of atlas lying across the spinal canal of the axis and foramen magnum; k, anterior arch of atlas; l, lower surface of body of axis.

The treatment of such injuries naturally resolves itself into three parts:¹⁵

1. Immediate reduction under anesthetic. Walton has his patient sit in a chair while he turns the head still further from the dislocated side. The head is then tilted to the sound side and extended while the column is rotated back into place. Hueter's method by rotation may be used. When the atlas is dislocated, before any method of reduction is undertaken, we should be sure that the odontoid process is not fractured. This method has a very limited range of application, because in the great majority of cases the odontoid is fractured.

15. Bryant and Buck, vi, 432.

2. If the odontoid is fractured, we are advised by some to place the patient in a plaster cast which will immobilize the seat of injury until healing can take place and then reduce the deformity. The objections to this plan are, if the cord is injured or has been compressed, that it fails to give the patient any opportunity for relief before degeneration can take place and subjects him to further pressure from callus and finally, judging by the experience of several surgeons who have undertaken to reduce the dislocation by direct operation, it will usually be found impossible to effect reduction after so long a time.

3. The plan which in selected cases seems rational, is operative interference. The length of time and amount of pressure required to produce degeneration of the tracts of the cord, whether nerve tracts once com-



Fig. 10.—The same as Figure 9, excepting that the posterior arch of the atlas has been removed, showing the increased amount of room secured.

pressed even for a moment, necessarily degenerate and whether degeneration extends from one tract to another and when begun in a tract is necessarily progressive, are not proper questions for discussion in this paper, but they do have an important bearing in that they often prevent us from treating such a patient as we would one with a similar injury in another joint or bone. While considerations of the cord are all-important in such injuries we should not be deterred from making every reasonable effort to restore dislocated or fractured spinal vertebrae, because many questions regarding the degeneration and regeneration of the cord are in the stage of controversy and remain unsettled. It would seem to be our plain duty to effect a restoration of the bony column in as far as it can be done without further endangering of the cord, except, of course, in those cases where the cord is hopelessly crushed. The

mechanical difficulties are great and often insurmountable, but perseverance in reasonable efforts to overcome them will certainly tell in time. It is a reasonable proposition that an injured cord has a better chance in a spinal canal with sufficient room than it has when held under even mild compression. For this reason the second indication would seem inadvisable in a majority of cases. A better plan is to have the injured parts exposed thoroughly by open operation. If the case is one of dislocation, efforts at reduction can be repeated under the direction of the eye and finger and failing in this, a laminectomy can be made. The

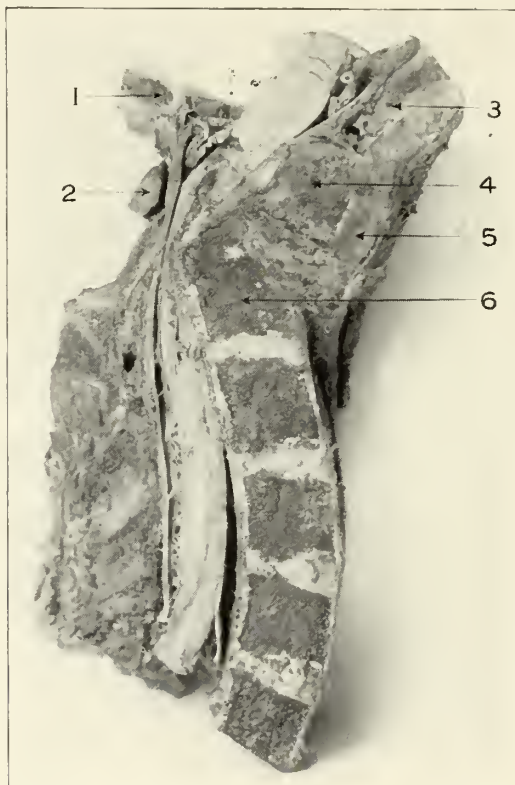


Fig. 11.—From photograph of occiput, upper spinal vertebrae, and spinal cord in case reported. The vertebral column, cord and base of occiput have been divided antero-posteriorly. (1) Posterior edge of foramen magnum; (2) posterior arch of atlas; (3) anterior edge of foramen magnum; (4) fractured and dislocated odontoid process; (5) anterior arch of atlas; (6) body of axis.

mistake of the treatment of my case was a failure to appreciate the compression produced by the posterior arch of the atlas.

This is illustrated in Figure 9, which shows the posterior arch of the atlas lying across the spinal canal and the effect of the removal of this arch is shown in Figure 10. As the atlas rotates on its articular process the posterior arch is carried forward across the spinal canal and when the articular process drops off into the intervertebral notch the posterior arch of the atlas is tilted up into the foramen magnum.

In bilateral forward dislocation of the atlas the posterior arch would be carried forward still more rapidly and the compression would be more pronounced. In fact it is difficult to see how a bilateral dislocation of the atlas could take place without immediate injury to the cord.

If the plan of treatment outlined above had been followed and a laminectomy made as soon as it was evident that reduction could not be effected, the outcome in the case reported might have been different. The first operation was carried out on a wrong hypothesis, that is, every effort was made to reduce the dislocation. At this time there was compression of the cord and notwithstanding the fact that this pressure was not sufficient to disturb the nerve tracts every effort should have been directed to the relief of that compression and it would have been a comparatively simple matter to have removed the posterior arch of the atlas. It was fully exposed and its resection would not have complicated the first operation in the least.

In dislocation of the atlas or in efforts at its reduction either by manipulation or operation, the two great dangers are injury to the phrenic nerve and rupture of the vertebral artery.

Post-Mortem.—(See Fig. 11).—A post-mortem examination was made, which is well illustrated by the accompanying photograph of a half section through the occiput, the spinal cord and the bodies and arches of several cervical vertebrae. The odontoid process is fractured and carried forward with the anterior arch of the atlas. The atlas tips downward and carries its posterior arch against the foramen magnum and the direction of the odontoid process is changed at least seventy degrees. This carries the edge of the body of the axis strongly toward the posterior arch of the atlas compressing the cord. The space available for the cord between the posterior arch of the atlas and the edge of the body of the axis did not exceed one-fourth of an inch. Notwithstanding this compression, it seemed to produce no cord symptoms for nearly four months, and then they began rather abruptly and progressed rapidly for two months.

THE MEDICAL TREATMENT OF THE PELVIC DISEASES OF WOMEN FROM THE STANDPOINT OF THE SURGEON *

J. F. PERCY, M.D.

GALESBURG, ILL.

My conception of a medical pelvic case is one in which there is infection, misplacement and distress without fixation. Fixation is Nature's slow way of improving local conditions in the pelvis until either the menopause or surgery removes the conditions which make the fixation necessary. I do not like the term "local treatments" because it has a bad ancestry. This form of treatment was abandoned when surgery invaded the abdomen and pelvis. But in spite of its unfortunate reputation it

* Read at the Sixtieth Annual Meeting of the Illinois State Medical Society, held at Danville, May 17-19, 1910.

did relieve suffering and benefited womankind, when intelligently used, and although we may want to give it a more modern name, we cannot do so without changing the title of this paper.

Of necessity we cannot consider, or at least should not, cases of tumors or other growths in the pelvis. We cannot, from the standpoint of medical treatment, pay attention to the gross chronic infections in the pelvis. These are the cases where a focus of pus will keep up a wall of intense irritation for years. Medical treatment followed in a perfunctory way will frequently give comfort. But medical treatment actively followed is dangerous because the inflammatory wall is likely to be thinned by absorption or trauma, which is usually applied in the form of pelvic massage, and the nidus of pus liberated in this way to set up a new attack with not infrequently dangerous complications. In this class of sufferers it takes good judgment and a judicial type of mind to know how far to go with medical treatment in the attempts toward relieving suffering, and yet not far enough to reliberate the real cause of the whole trouble; i. e., the infection. It is true, however, that if nice judgment can be used, these patients are frequently guided to a point where they will immunize themselves as far as their infection is concerned, and then absorption or resolution, to use familiar terms, will carry a not inconsiderable per cent. of these patients to at least a symptomatic cure. We all know, or we should know, that the problem here is but another or later phase of the acute, and finally subacute, and still later, chronic puerperal infection of the lying-in women. Physicians are still treating these cases by active local treatment during the acute stage. It is almost impossible to stop the alarming symptoms by such means, just as it is almost impossible to save the lives of these sufferers when surgery is employed. Nature, through untold centuries of attempted resistance, has surely learned how to take care of this class of infections better than either the meddlesome physician or surgeon. I would recommend for your reading along this line a very instructive article by Dr. H. S. Crossen, of St. Louis, in *Surgery, Gynecology and Obstetrics* for October, 1909.

True, after sterilization has occurred and the painful inflammatory fixation with adhesions remains, then the beneficent art of the surgeon may be appealed to. Surgery has won some of its greatest triumphs in the cases where inflammatory fixation was substituted for surgical fixation. Inflammatory (Nature's) fixation is usually crude, cruel and devitalizing and yet of unmeasured importance to the patient especially in the first stages of the infection. Surgery has done some of its worst work, or at least gotten almost negative results in the class of cases which are typified in the first sentence of this paper. On the other hand the medical practitioner, in attempting to treat these cases mentioned in that first sentence, has converted many of them into major surgical cases. No physician has a right to treat any pelvic case who cannot at least give a rather good and safe guess on what he has got to treat, after making a pelvic examination. If, when the examining finger touches the cervix, and it is found hypertrophied, causing pain when moved in any direction, then he has a case of cervical infection to treat. If he also finds that the

uterus is markedly displaced, enlarged and painful when attempts are made to move it, he has a case of uterine infection. If he sweeps the examining finger over the vault of the vagina, and finds a resisting dome with everything fixed, he can do but little good with his treatment, outside of rest in bed, because, in addition to cervical and uterine infection, the pelvic tissues are involved. But if he finds that the vaginal walls are flaccid, and he can feel nothing but the misplaced uterus with its enlarged cervix, he has a case that he can do more harm with than can the surgeon. To shorten the round ligaments in this case, and amputate the cervix, gives no greater or more permanent relief than does the treatments applied by the clean techniched medical man. Surgery often leaves, after operation, in these cases, a pin hole os, into which it is usually difficult to introduce the smallest sized sound. Just what effect this would have on a future pregnancy and an easy delivery, I am unable to state, assuming, of course, that such a case can become pregnant.

When one sees the result of operative work, and with it, frequent failure to hold the parts in position after surgical fixation, and with it all persistence of the chronic infection, one questions if surgery offers any more than does the so-called medical treatments in this class of chronic sufferers. However, I do not want to be understood as saying that the medical treatment which attempts to secure fixation is any better in its permanent results than that offered by surgery. But I do want to insist that just in the degree that either medical or surgical means can establish fixation, just in that degree will the parts heal, as does the fracture when fixed by the splints. In the old days many of these cases were held in position by the pessary. But in those days the practitioner was practically ignorant of infections, and what was gained by artificial means of fixation was often lost through the introduction of new infections by the injudicious use of unsterilized sounds, dirty fingers and speculi.

The average pelvic case complains more of backache, as a rule, than of any other one symptom. This sometimes becomes so distressing as to be the chief indication for treatment. The principal causes of backache in women have been written upon by many gynecologists. Garrigues, in an excellent article in the *Jour. A. M. A.*, Jan. 2, 1909, mentions these, and lays special stress on cellulitis of the uterosacral ligaments as a cause of this distressing condition, and recommends severing the ligaments after opening the abdomen. My own experience suggests that cellulitis of the uterosacral ligaments must be a rather infrequent cause of backache in women. I believe that I am right when I say that the most common cause of backache in women is hypertrophy of the cervix uteri.

It is exceedingly rare to find a woman with a backache that is not definitely localized and with no enlargement of her cervix. No text-book, or author that I am familiar with, has ever suggested this etiology; and if this paper contains nothing else of value, this suggestion, if remembered, will be the means of giving an immense amount of relief through the so-called local treatments. This form of backache can be relieved by amputation or a resection of the cervix, but these patients are not as well

relieved as with local treatments applied with the idea of fixing the uterus by pressure. Any antiseptic that is not too stimulating, and will not corrode, can be used in addition to the tampons which are used to maintain fixation. The fixation is the important thing, not the drugs applied.

Permit me a word about the tampons. First, they should be of material that will permit of drainage, and nothing is better than the lamb's wool. This will not pack. It is expansile, and in this way keeps up a firm but not dangerous pressure fixation. Another practical point, if the perineum will not hold the lamb's wool as it is placed at the time of the treatment that treatment is useless. Tampons are of no value if they do not cause and maintain fixation. To apply a tampon containing some form of medicament, with the idea that the medicine, without fixation of the parts, will do something useful, is practicing a fraud on the patients. Women with pelvic conditions will remain under this kind of treatment (without fixation) as long as they have a hope that something will be accomplished. But when hope has waned the reputation of the physician who promises anything from this sort of treatment also wanes.

There are other adjuncts to the successful treatment of this class of patients other than the mechanico-medical procedures just enumerated. The two most important are, first, physical and sexual rest, and second, freedom from worry. Who has not seen this class of cases in the hospital do well as long as they remain there, both physically and mentally. But they return home after two weeks, and every one is disappointed because the improvement did not persist. The trouble is that they remained too short a time where they could rest and be relieved from the tiresome routine of the average home. So in attempting to fix the pathologic pelvic structures, in order that Nature may repair the damage in the way outlined above, we must not forget that the medical treatment must have combined with it the same kind of physical and mental rest that the surgeon insists upon after he operates. It requires some judgment and experience to get the best results, but a little sensible thinking will compensate for this, if it is lacking. The patient should be advised to go to bed for a certain number of hours each day. She should be told to take the best room in the house. Some one in the home, who has sense enough to see that the patient is not disturbed during her rest hours, should be appealed to to follow the physician's orders.

Another form of rest is a visit to a neighboring town, or even to the neighbor's, for a day or two. This is especially valuable when the patient gets to the point where she says, "Oh! doctor, I don't believe that I am improving as fast as I did at first!" When a patient says that, it is time to ring the changes on the auxiliary part of the treatment.

In this way I have briefly outlined my views on the medical treatment of the pelvic diseases of women. Of necessity, I have left much unsaid. I would like to discuss with you the supreme importance of a thorough general examination as a preliminary to any form of treatment. I would like to enlarge upon the necessity of being sure before instituting

any form of special treatment in a woman that the pelvic conditions are very probably the origin of all of her complaints. Local pelvic treatments can do the patient no good if she is not eliminating well through both the kidneys and the bowels. If the heart is flabby, representing a mere general condition, or she is suffering from a generalized weakened muscular structure which is portrayed by enteroptosis and neurasthenia; if her home surroundings from the standpoint of hygiene are bad; if mentally or morally the patient is below the average of good women in her community—just in the degree that these things are true, just in that degree will the problem of the practitioner who has charge of her case be increased.

We are living in a day that is seeing the gradual curtailment of the work of the specialist. The practitioner who reads, who studies, and above all, who does some constructive thinking, is realizing that the problem of disease manifestations, whether in the pelvis of women or in the bellies of men, has problems that are outside of the pathologic spot which can be touched with the finger, or heard with the stethoscope, or seen through the tube of a microscope. Nowhere is the truth of the statement just made better exemplified than in the treatment of the pelvic diseases of women. The pelvis has been made the solar system of woman-kind, because the specialist has developed the diagnosis of the pathologic conditions found there to a degree far beyond what the medical man has done toward working out her other, but usually coincident, conditions. The medical man is gradually overcoming this, for he is realizing that woman's solar system has other important correlated spheres that the gynecologist purposely has not invaded.

DISCUSSION

DR. CLIFFORD U. COLLINS, Peoria: Dr. Percy has presented to us a very interesting subject for our consideration. In regard to the local treatments for pelvic diseases I have not much faith in them. I have held with the views advanced by Dr. T. J. Watkins before this society at Rock Island in 1905. At that time, he pointed out the inefficacy of vaginal douches, iodin applied to the vaginal vault and vaginal tampons for inflammation of organs up in the pelvis which have a different blood supply. Such treatment may seem to do good for a while, but my experience has been that the relief is not permanent. But I do have considerable respect for general medical treatment in some phases of pelvic disease and I wish to heartily endorse all that Dr. Percy has said on that point. I have often found it advantageous to call to my aid an internist, both before and after surgical procedures, in some cases of pelvic inflammation.

There is one factor that the essayist did not mention in deciding whether surgical or medical treatment should be instituted and that is the patient's social condition. He has truthfully said that physical and sexual rest and freedom from worry are valuable adjuncts in the medical treatment of these patients. Is the patient so situated that she can obtain these adjuncts? It is useless to tell the mother of six children with no maid, who has a vigorous husband on a small salary, that she must have physical and sexual rest and freedom from worry. The removal of inflamed, diseased pelvic organs in such a case will accomplish in a short time what it would take months to accomplish with medical treatment.

For a woman who is so fortunately situated that she can obtain physical and sexual rest and freedom from worry the medical treatment, which may cure her and leave her pelvic organs intact, should be given the first consideration.

DR. S. C. STREMMEL, Macomb: I want to emphasize the importance of rest in the pelvic infections of women. Of course, as Dr. Collins has stated, if the woman is not in a social condition which will enable her to get this rest, it will often be impossible for her to secure it. With regard to local treatments, I speak from experience in this class of cases. I have had fifteen years experience in treating such cases and became so disgusted with the various forms of local treatments that I have abandoned them entirely and I know of no form of local treatment in the way of tampons and applications, that do any good in the treatment of the pelvic infections in women. I want to emphasize the importance of rest, wherever that is possible, on the principle of the treatment of inflammation anywhere else. It has been recognized for years that rest is the best form of treatment for inflammation or infection anywhere and where it can be secured that alone will do the work in a majority of the cases.

DR. EDWARD BOWE, Jacksonville: I have been much interested in this paper. Dr. Percy referred to the diagnosis of pelvic conditions in women. I desire to say regarding this paper exactly what I have previously said with reference to the neurasthenic condition in women who have reached adult life, namely, in the majority of cases of neurasthenic women that are neurasthenics from injuries in labor, where the pathologic condition has existed for some time and is such that the neurasthenic condition has become fixed, I believe that local treatments and treatments of the kind mentioned will only exaggerate the condition and create a degree of introspection bordering on psychasthenia. This is true of neurasthenic conditions in general. It is true of those neurasthenics who through a degree of introspection believe that they are suffering from some form of female disorder and enlarge on this condition, and it furnishes a nidus on which they develop other neurasthenic symptoms which nothing will relieve. I believe from my own observation and treatment of these cases in my own practice and in that of my associates in surgery, that local treatment only adds to the introspection which produces a train of mental symptoms that make these cases a bugbear both to the physician and the surgeon.

I hope to be able to present a paper on this subject before this society at one of its future meetings because it is a wide field. If we are going to do anything for these cases we want to do it early. We should strive to make a diagnosis at the time the woman is confined and this appeals especially to the general practitioner and to the man who is doing obstetrics and particularly so in the country. If there exists a pathologic condition, for instance, an injury to the cervix or perineum, and it is allowed to continue for some time, and the patient herself discovers it and discusses it with the family physician, gradually she develops a train of neurasthenic symptoms. If the condition exists in a woman who has also passed through adolescence as a neurasthenic, local treatment or surgery alone will not give her permanent relief. What these patients need is rest in bed and the Weir Mitchell rest treatment will accomplish as much minus the surgery.

DR. W. F. GRINSTEAD, Cairo: I have listened to Dr. Percy's paper with a good deal of interest and I would like to say that the physician is too apt to go to an extreme in these cases from his standpoint. On the other hand, the surgeon is apt to go to extremes and to see everything from the surgeon's standpoint, but we should be very careful not to go to either one of these extremes. The physician gets in his good work in these cases in the acute stage in preventing these patients from ever getting to the surgeon. He strives to bring about a cure before the condition becomes a surgical one, because in the beginning in most of these cases the condition is local. We should be sure to keep the patient away from the surgeon in the acute stage, because the surgeon who meddles in the early stage of pelvic infections often does a great deal of harm. It is better to wait. But when we have a case of infection that has developed into the chronic stage, which involves the cervix, as has been pointed out by Dr. Percy, or has extended into the corpus or into the tubes, the physician is wasting both the time and means of his patient, as a rule, when he is attempting to restore that patient to health by the usual

medical or local means. We have then a chronic condition which must be relieved by surgical means. We must repair the lacerated cervix. We must repair the lacerated perinei. We must restore malpositions of the uterus and we can do a great deal of good or harm in treating chronic infections of the cervix and the body of the uterus. But when these infections involve the tubes and we get displacements of the uterus and fixation, medical treatment or local treatment accomplishes very little for us and the surgeon must cure that class of patients by operative measures.

DR. CHANNING W. BARRETT, Chicago: This paper is a very timely one if it can get us to look at the subject from the standpoint of the patient, instead of from the standpoint of the surgeon, the medical man or the alienist. The discussions on this subject have been interesting. Naturally the surgeon looks at these cases from the standpoint of the surgeon and he thinks pelvic disease should be operated on. The alienists' standpoint is that operations for pelvic disease do very little or no good. But that is not the question at all. The question is one of pathology, finding out what this particular patient has and treating the condition not according to the surgeon's standpoint of treating pelvic disease, but of treating the patient in accordance with what ails her. The question is one of close study of pathology of pelvic disease. To say that pelvic disease in general is going to be cured by rest is entirely out of place, because there are any number of conditions that will not be benefited by the rest treatment, or that will only be relieved while the patient is resting. Again, to say that the pelvic disease is going to be cured by operative measures in all instances is out of the question, because there are a lot of conditions which surgery would not help, but rather injure. All patients are not cured by the short surgical route. The whole question resolves itself into a close study of the pathology and of the following treatment along that line.

Dr. Percy deals with the question of infection. I think we help patients most in that line by keeping distinctly in mind that infection is the thing that is harmful to the patient, and that every inflammatory process from the increase of leukocytes, the bringing of the blood supply to the pelvis, the formation of the plastic material, the fixation, the adhesions, does something to save the patient for the time being. It is life saving while the infection is going on, but when the infection has gone we have troublesome and painful inflammatory conditions, old chronic inflammations, and if we go in and remove the debris we will help the patient most by keeping in mind just what is going on at the time.

Dr. Percy speaks of fixation by the tampon and fixation by other treatment. I doubt the wisdom of that term fixation. Fixation is harmful. It is replacement that helps, but it is the replacement of it that does good, helping the circulation thereby.

DR. M. S. MARCY, Peoria: I always admire the enthusiasm of Dr. Percy's papers. He makes strong statements and believes them. He made one statement to the effect that the physician who would treat this class of cases by local treatment was imposing on his patients. I would like to ask him if it is imposing on a patient when a physician can relieve backache, a severe pain on the top of the head and the neurasthenic condition which comes over her, or whether it is an imposition when he can reduce the hypertrophied uterus from a large congested mass to one-third of its former size and by supporting the uterus allow it to take on its former position?

DR. O. B. WILL, Peoria: To my mind the speaker who preceded Dr. Marcy (Dr. Barrett) struck the keynote of the whole situation, as brought out in the paper of Dr. Percy. I have always been sorry that obstetrics and gynecology had been thrown out of this society and the national association as a separate and distinct working division, the need of which has been emphasized by the short discussion we have had from the standpoint of the surgeon. The great fundamental fact has been overlooked that woman is an anatomical and physiologic entity, and as such her disorders must be studied and treated from the view-point of both medicine and surgery, and by one who recognizes woman in the light of such distinct anatomical and physiologic entity.

DR. JAMES F. PERCY, Galesburg (closing the discussion): With reference to what the surgeons have said, I am willing to agree with them that operative procedures in the cases of women of wealth, or women who are not wealthy, will bring about good or even permanent results in most instances. But to say it is the only form of treatment is a mistake. I was taught years ago, when I began to do surgical work that operations would bring about permanent results, but they did not always do it. I have not only seen this in my own surgical work, but have seen it in the work of others. A woman came to me not long ago whose pelvic structures had been fixed by a man who knows how to do good surgery; yet one side of the fixation had entirely let go, so that she complained of some of the old symptoms.

In reply to the question of Dr. Marcy, the point I tried to make was the value of treatment by fixation; that we should simply follow Nature's methods. Nature fixes these structures for two purposes. First, to get a chance at the infection, and, second, to hold the parts as nearly in anatomical position and relation as they were found when the infection began.

With reference to the remarks to Dr. Bowe and Dr. Barrett, every fellow looks at his cases from his own standpoint. If he is a specialist, he looks at the case from his special line. That has been the weakness of specialism and the new trend in medicine is for the men in practice to get away from that thing. They have got to do it. Dr. Bowe makes the statement that these patients become introspective from local treatments and then goes right on and recommends his special line of treatment and puts the patient to bed. If there is anything that will make the average individual introspective it is to put him to bed. In other words, doctors are one of the prolific causes of neurasthenia as we see it to-day. (Applause.) There are many people whose neurasthenia is perpetuated by doctors. I do not wish to be understood as saying that they do it purposely, but they do not recognize the importance of suggestion. When a physician sits down and in cold blood looks at a woman or a man whom he already knows from the moment he talks to them that are probably neurasthenic, as though he was a judge that was going to condemn them to one thing or another—they do not know what—he is simply perpetuating their neurasthenia. The rough old fellow, who says, "Oh, hell, I don't think there is much the matter with you," does more to cure neurasthenia than the other fellow who picks out a long list of symptoms and talks about them to the patient. (Laughter.) How many of us have had the experience of asking a patient if they had a certain symptom. I was looking for locomotor ataxia in a woman and I asked her if she did not feel that she was going to pitch forward in going downstairs and she said, no, right away. But the next time she came to me she said, "doctor, isn't it queer I never noticed that thing before, but the next time I went downstairs I had to hold on to the banister." (Laughter.) The man who is dishonest exerts a tremendous power over these people and the man who is ignorant unfortunately has the same power, although he does not know what he is doing.

I am sorry that no one discussed the question of backache, because I really think I have discovered something new, but no one has paid any attention to it in the discussion. I thank you, however, for the attention you have given the paper.

ECTOPIC PREGNANCY

E. C. FRANING, M.D.

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The tragic picture of a patient with a ruptured tubal pregnancy, whether seen or read from text-books, should leave an impression that should not be forgotten in everyday practice. But such is not the case.

* Read at the Sixtieth Annual Meeting of the Illinois State Medical Society at Danville, May 19, 1910.

About 90 per cent. of the cases of extrauterine pregnancy consult the doctor before they go to the surgeon. It is safe to say that a large number die, never having been diagnosed. No less than 20 per cent. of these cases are never diagnosed before they die or go to a surgeon on account of a serious condition.

With a condition that gives such a fairly constant symptomatology it seems to speak rather badly for the doctors. This is not altogether due to the inability of the profession to diagnose the condition but mostly carelessness acquired by the doctor in his routine work or by the lack of time. And if this paper accomplishes nothing else or adds nothing new, if it will impress upon the general practitioner, for it is to him these cases first come, that ectopic pregnancy occurs quite often, that it may occur in any woman during the child bearing period and that the emergency stage is in a large majority of cases preventable, it may save some lives and accomplish some good.

Every practitioner meets cases of appendicitis, intestinal obstruction, pyosalpinx, tuberculosis of any organ of that region, ovarian cyst, peritonitis pus in the pelvic region, ectopic pregnancy or other conditions which simulate each other in the pelvic region that need care for a diagnosis. Any of these conditions may occur in any woman during the child bearing period. In some of these conditions it matters not whether they are operated on to-day or in six weeks, or at all, while some may go a short time and some are emergencies. As the symptoms of any of these conditions a great many times are parallel while some are very grave conditions and suggest certain lines of treatment, it is evident that great care must be taken in placing these conditions at least until it is proven benign.

These include the patients that come to the office as well as the patients to whom we are called. Many times a correct diagnosis in the office will save a tragic stage of ectopic pregnancy. No case, no matter how insignificant it seems to be, should be treated lightly until at least it is proven to be a case which cannot terminate fatally. As this part of the work falls on the general practitioner, it devolves upon him to use especial care as the tragic stage of these cases rarely occurs at a convenient time or place, and the proper treatment cannot be given on account of being unable to move the patient to proper surroundings.

Pregnancy may occur any place in the female genital tract from the corpus luteum to the external os. If it occurs any place outside the uterus, it is ectopic. If it occurs in the cervix, abortion is the result.

Neugebauer collected 155 cases of intra and extrauterine pregnancy combined, having reported two cases coming under his own supervision. He considers it a grave condition principally because of misleading inability to diagnose. Fleurent also reports a case of intra and extrauterine pregnancy combined as does also Vineberg report two cases.

Saniter reports a case of twin tubal pregnancy on one side, the foeti being of unequal size. His statistics show twenty other cases.

Abdominal pregnancy may occur but is always secondary. The pregnancy probably occurs in the tube or ovary which ruptures and the placenta adheres to the peritoneum at any place with which it comes in

contact. These pregnancies go to term many times resulting successfully for both mother and child. Interstitial pregnancies, pregnancy in the walls of the uterus or tubes, are reported by Wenibrenner, Boss, Nash, Riech, Wagner and others, about fifty cases in all.

The causes of ectopic pregnancy in practically all the cases is a mal-anatomic condition, whether it be a malformation of the mucous membrane due to an inflammatory condition, or from pressure from without or within or kinks or valve formation in tubes, or what not.

Recently Schawte, Dührssen and Kustner have shown that practically all the inflammatory conditions of the mucous membrane of the tubes are of gonorrheal nature. Martin and Otis have found that after acute gonorrheal infection with exudate into a tube the mucous membrane forms diverticuli in practically all the cases and in these diverticuli is where the ovum lodges and pregnancy develops.

The symptomatology of ectopic pregnancy in a majority of cases is fairly definite; the disturbed menstruation, the characteristic pain, the irregular uterine hemorrhages and the mass at the side of the uterus are fairly characteristic. In the tragic stage the above in connection with a severe sharp pain followed by a fainting spell, shock symptoms of hemorrhage and collapse and within twelve to forty-eight hours a low grade of temperature not having been ushered in by a chill.

The most common disturbance of menstruation is its cessation, which generally occurs the period following conception. The cessation may be complete or incomplete, unaccompanied by any symptoms or with just the symptoms of pregnancy, without or with pain generally located in the side. Any degree from a slight to a severe uterine hemorrhage may begin before even the first period which at the time for menstruation becomes more profuse. Or it may begin at the first period or any time during the period of the pregnancy. The hemorrhage may be so slight as to be hardly noticeable and last only a few hours, or it may last for days or weeks with intermittent periods of no hemorrhage, or profuse enough to make it alarming or at least put one in mind of a miscarriage. The odor may be of normal blood but usually has the odor of disintegrated blood unless accompanied by an infection, when there is an odor of putrefaction. In some cases the periods are normal or decreased in amount.

The next symptom is pain. It is sharp, acute and lancinating, and does not radiate and is generally referred to the ovarian regions of the affected side. The pain generally begins shortly after conception and is due to the distention and rupturing of some part of the tube.

When the pain begins there is danger, as the tube walls are put on tension and begin to rupture. Only a single coat may rupture slightly or considerably and if such is the case the hemorrhage is either held in the tube as clots or is thrown into the uterus as a uterine hemorrhage. But it is only when all the coats give away with a slight or severe abdominal hemorrhage that we have shock and collapse.

However, pain may be only a later symptom or absent until the rupture of the tube, when it generally becomes suddenly increased, followed by almost, if not altogether, complete cessation of the sharp character

but drifts off into first a slight, but later an extreme tenderness or soreness. It must be remembered that pain is not a necessary symptom and at the time of the rupture may be almost entirely absent.

It must also be remembered that the process of tubal pregnancy stops when the fetus dies, unless there has been a rupture of such a large vessel that the hemorrhage continues or an infection begins. The death of the fetus is due to interference with its nutrition or circulation. There may be a slight or severe lancinating pain before or at the time this occurs but later the pains would be as any benign tumor mass of the size and location.

All hemorrhages from the uterus must be accounted for or considered dangerous until they can be accounted for. Hemorrhages of extrauterine pregnancy generally is a later symptom than pain occurring about the fourth or sixth week and is due to bleeding in the tube, which in turn is thrown into the uterus. It may follow a supposedly menstrual period or pains which may be mistaken for abortion pains and the condition considered a miscarriage. As a rule the hemorrhage follows the pains. The blood is of a dark color and has more of a decomposed odor. The hemorrhages are irregular, may be very slight or more severe, seldom serious. Hemorrhage may occur only once during the period of the pregnancy or it may be repeated or almost, if not continuous, or it may be altogether absent.

Sooner or later a mass appears in the affected side. Immediately as the pregnancy begins the tube begins to enlarge and by the end of the fourth week is as large as a walnut and at the third month the size of a small apple. The time it can be discovered before the rupture depends on the build of the woman, the relaxation with which she can stand an examination and the ability and care the examiner uses. The shape may be rather oblong or round. It is rather soft and slightly boggy to the touch and nearly as tender as a pus tube. After the rupture a sort of a boggy mass is felt on the affected side which includes the pregnancy and the blood. If considerable hemorrhage has occurred the mass extends back of the uterus to the other side and up into the abdominal cavity. The whole lower abdomen is tender and rigid, centering over the affected tube. An ectopic pregnancy should not be diagnosed as such unless a mass can be felt close to the uterus but independent of it, or, you have good reasons, from the touch, to think it is there coupled with other typical symptoms.

It might be well to say something about temperature and pulse. In the non-tragic stage the temperature remains normal unless there has been considerable hemorrhage in the tube when there may be one to one and a half degrees temperature and pulse slightly exaggerated, according to conditions in the tube. At time of rupture temperature and pulse betray the shock. Very shortly the pulse comes down and indicates the amount of hemorrhage and becomes more rapid as bleeding continues. Temperature in twelve to twenty-four hours goes from one to two or three degrees above normal and wavers there about as above.

Most any condition in the abdomen may be mistaken for ectopic pregnancy, but those most common are pyosalpinx, pelvic abscess, appendicitis, intestinal obstruction, fibroid, and ovarian cyst. Fortunately for the diagnostician and surgeon these are all imperative operative cases except the last two and these are elective, so that in any of these conditions operative procedure would be justifiable provided one is prepared to meet any condition found. To sum up the symptoms for practical purposes in ectopic pregnancy are amenorrhea or disturbed menstruation in practically all cases; pain sharp, irregular uterine hemorrhage of grumous character, mass located at side of uterus; sometimes some symptoms of pregnancy, as vomiting, enlarged breasts, etc.; absence of leucocytosis, normal temperature and pulse, unless a rupture occurs, when the symptoms of shock and hemorrhage occur and temperature from 100 to rarely more than 102 appears in from twelve to twenty-four hours preceded by no chill. The symptoms of the other conditions should be well known and will not be given here.

The treatment of ectopic pregnancy is surgical as soon as the diagnosis is made. If the diagnosis is doubtful and the patient seems to have a serious condition in the pelvic abdominal region she should be opened. It is true that many women have the condition of ectopic pregnancy with very little or no trouble. Others have considerable trouble for months or even years and the pregnancy with its pathologic results are absorbed or encapsulated or calcified and the patient recovers. But there are many disastrous results and as the outcome of each individual cannot be anticipated the best rule to follow is to operate at once. Of course, if the patient is under almost impossible operative conditions and does not seem in a dangerous way, then surgery may be postponed until the condition can be improved.

It must be remembered that women in this condition do bleed to death and that women in this condition can get close over the line but by tying off the bleeding vessels and using hypodermoclysis, transfusion, etc., can be saved. So it becomes our duty to operate in all these conditions as soon as the diagnosis is made unless the patient could be put under conditions with no danger. These patients are better operated on in the homes where it is possible, unless they can be removed to a hospital in a short space of time or without danger. The treatment other than surgery is nothing by mouth unless calcium chlorid in grs. XV doses for four to six doses to increase the clotting of the blood. Morph. sulph. gr. $\frac{1}{4}$ hypodermically, may be used to put the patient and all her organs at absolute rest for several days until the clot is organized.

CASES

No. 1.—Mrs. W., aged 25 years. Good health, leucorrhea, menses regular until past two months. Began having same about one week after missed period, some pain on right side. Some hemorrhage until about seventh week when she had severe pain on right side. Fainted, falling on floor; pulse rapidly went up to 140 and seemed in hard shock. Did not rally; operated in eight hours, death following in one-half hour. The abdomen was full of blood with the arteries on right side still bleeding.

No. 2.—Mrs. H., aged 33 years. Always well, except one attack of gall-stones one year previous. Menses regular, some leucorrhœa. She began complaining of pain in right ovarian region, some irregular uterine hemorrhage, disturbed menstruation, temperature 99 to 100, pulse 90 to 100. Tumor mass appeared on right side. Operation three months after first trouble, revealed much clotted blood on right side. This was removed, vessels tied and drainage put in. Recovery with some pain on right side for six months, which completely cleared up.

No. 3.—Mrs. G., aged 38 years. Family and personal history negative. One child seventeen years, one two years, none between. Began having trouble two months ago. Menses stopped, but irregular hemorrhage sometimes quite bad. Did not go to bed until two weeks. Large mass appeared on left side, gradually extending across, which within a few weeks was quite palpable and discernible above pubis. Temperature 98.5 to 101, pulse 95 to 110. Operation revealed the tumor mass to be new and organized blood clots, which were removed, vessels tied and drainage used. About four months getting strong.

No. 4.—Mrs. W., aged 24 years. Health good, one child three years. Missed two periods, some pain on left side, irregular hemorrhage, collapsed on floor from sudden pain on left side, followed by rapidly forming mass on left side. Operation, clots removed, vessels tied, abdomen closed, recovery complete and rapid.

No. 5.—Mrs. X., aged 42 years. One child twelve years, next child eighteen months old. Strong and healthy, missed one period and in three weeks fainted while out in yard. Pulse immediately went up to 135. Did not recover from shock. Remained in this condition 48 hours, when sepsis complicated and she died 16 hours later.

No. 6.—Mrs. B., aged 30 years. Good health, three children, youngest two years. Missed one period with a slight hemorrhage. Nothing more until about four weeks when she had a severe pain in side. Operation, clots and fetus removed, vessels tied, abdomen closed, recovered.

No. 7.—Mrs. B., aged 29 years. Health good, leucorrhœa. Missed one period. In three weeks pain in right side, slight hemorrhage, soon a hard sharp pain with elevation of pulse, temperature 99 to 101. Mass appeared in right side. Operation, vessels clamped, clots and fetal tissues removed. Abdomen closed; recovered in short time. In one year from that time she missed another period with pain in left side. Soon a small tumor appeared in left side. Hemorrhages soon followed. Operation revealed a tubal pregnancy on left side which was removed and abdomen closed. Recovery with pains in lower part of abdomen, which cleared up.

No. 8.—Mrs. D., aged 30 years. Healthy, except nine years ago had several attacks of gall-stones, which were removed by operation six years ago. One child twelve years ago and considerable leucorrhœa since. Last few years had considerable pain in uteroövarian region; missed one period; in two weeks had hard pain on left side and fell on bathroom floor, pulse 118, temperature 97, which in 48 hours went to 99.5. Boggy mass soon appeared and was operated on. The pelvis and left side were full of blood, which was removed. Vessels tied, abdomen closed. Recovery.

No. 9.—Mrs. D., aged 33 years. Always healthy, with apparently very little uterine trouble. Began having considerable trouble on left side, with marked lessening of menses, followed in week or so with slight hemorrhage. Small tumor appeared in left side. Operation, left tubal pregnancy without rupture, which was removed and abdomen closed. Rapid and complete recovery.

No. 10.—Mrs. P., aged 36 years. Always very healthy until one period was suppressed with pain on left side. Later the pains became so severe she went to bed. She still had considerable pain in that region with bloating. In about two weeks the pains were found mostly on the right side with soreness generally in lower part of abdomen. The pains remained in this region for two weeks when it changed back to the left side where she still had them at time of

operation, which was about two weeks later. Temperature 99.5 to 101, pulse about 100. She had been in bed all the time for six weeks and yet the abdomen was found full of blood organized and simply clotted. Organized and clotted blood was found up in the gastric region and over on right side up along the ascending colon. The arteries were tied, the blood clots as far as possible were removed and abdomen closed without drainage. Recovery complete and rapid.

No. 11.—Mrs. B., aged 33 years. Very robust, married ten years. No children. Menses regular and in later years considerably increased. Was told she had tumor on left side. She missed one period, then had slight hemorrhage with increased pain on left side. About three weeks after last period she had some pain in left side; pulse 118; went to bed. Examination showed quite large tumor on left side. On fifth day after had a chill, temperature went up to 103. Operation showed much clotted blood, pus in tube and peritoneal cavity, a fibroid on left side size of orange. The arteries were tied and drainage put in from above and below. Death from general peritonitis four days later.

No. 12.—Mrs. S., aged 35 years. Family and personal history good. Married twelve years. Menses regular, but flowed considerably, accompanied by pain. Diagnosis of tumor made. One day after considerable disturbance of menses, had severe pain in left side. This was soon followed by soreness, which lasted several days. In about two weeks had a very severe pain in left side and fell on bathroom floor. She was put in bed, pulse 120, no temperature. The pulse remained from 110 to 120, but temperature went up to 101; then, following a chill on fourth day, it went to 103. Operation revealed an ovarian cyst with tube stretched over top of it, having a ruptured ectopic in the outer end and pus in the inner end, which had ruptured into peritoneal cavity and omentum. Tube and ovary with its cyst was removed. Drainage above pubes with recovery. Eight months later was opened up for relief of adhesions and an ovarian cyst on right side as large as an orange was found. The uterus, tube and ovary, with its cyst, was removed. Feeling very good.

No. 13.—Mrs. C., aged 30 years. Good health. Last month or two having considerable pain and trouble in lower part of abdomen. Disturbed menstruation, but no tumor found. The abdomen was opened, very mild acute inflammation of appendix and left tubal pregnancy size of English walnut was found. Both were removed with complete recovery.

DISCUSSION

DR. G. W. GREEN, Chicago: I would like to emphasize one point in this very excellent and timely paper, and that is early operation; for the reason that many of these patients, as the essayist has said, are likely to bleed to death, and because a certain number of them become infected later. In our experience with this class of cases we have found that many of them are brought to us two and often three weeks after the rupture. As the essayist has pointed out, the diagnosis is not very difficult. It is often quite simple, so that a patient who has had tubal pregnancy on one side, and an operation, will recognize tubal pregnancy, if it occurs on the other side later on. I had such a patient sent to me by her family physician. She had had tubal pregnancy on the right side, which was removed after three weeks, and having another occur on the left side, recognized the symptoms, consulted her family physician, who sent her in, and the tubal pregnancy was removed before rupture took place.

DR. CLIFFORD U. COLLINS, Peoria: If I understood the essayist correctly, he stated that there are several conditions that may be mistaken for extrauterine pregnancy, and among them he mentioned ovarian cyst. He stated that in the other conditions he named, operation was imperative, except in cases of ovarian cyst and one other condition. I wish to call attention to the fact that in ovarian cyst operation may become imperative, and the condition may be mistaken for extrauterine pregnancy. I have had three cases where there was twisting of the pedicle in a small, thin-walled ovarian cyst, and complicating a

pregnancy. There we had the two main or cardinal symptoms of extrauterine pregnancy, irregularity of menstruation and pain. Twisting of the pedicle produced gangrene of the cyst and made the operation imperative, so that I have no apologies to make either for the operation or for the mistake in diagnosis, but I want to call attention to the fact that an ovarian cyst, twisted on its pedicle, may be mistaken for extrauterine pregnancy, and in that event the operation is also imperative.

DR. ROBERT J. CHRISTIE, Quincy: My experience in the handling of ectopic pregnancy now embraces about twenty cases. I have not made a mistake in a single case. I have never met with the rare complication that Dr. Collins mentioned, although I see the rationale of his position. The only two patients I have been interested in particularly, who lost their lives from hemorrhage, have been those who were operated on immediately as emergency cases *in extremis*, who were in great shock from hemorrhage. It has been pointed out by the best operators that this is not the period of election for operating in ectopic gestation. A little delay and some help by absolute quiet, transfusion, proctoclysis, or hypodermoclysis, will help the patient; in all probability, will arrest the hemorrhage by the quietude and passiveness of the treatment, and within a reasonable period the woman is in better condition for treatment.

One rarity in my experience with ectopic gestation was a true ovarian pregnancy which, up to a short time ago, was denied as to the possibility of its existence, but it is now recognized as a possibility from unmistakable laboratory evidence. My case was number nineteen on the list of the world's records.

DR. E. C. DUDLEY, Chicago: I wish to record two errors in diagnosis which I have made in the last three or four weeks. The first was a case in which an almost positive diagnosis of tubal pregnancy was made. The pregnancy was thought to be at about the eighth week. The patient was etherized, her abdomen was opened and I found a small ovarian cyst with a twisted pedicle. The physical signs and history of the case corresponded so closely with those which ought to belong to tubal pregnancy, that I had no hesitation in making that diagnosis.

In the second case, last week I made a diagnosis of tubal pregnancy at about eight weeks and thought rupture was about to take place. I anesthetized the patient for examination as a matter of precaution and here I would like to say that no surgeon should ever open the abdomen in such a case without having previously made conjoined palpation with the patient under ether. Sometimes by so doing he will save himself a most humiliating accident. In this case the patient was under ether and all preparations for the operation had been made. The family physician was present and everything was ready for the incision. A conjoined examination, before proceeding to make the incision, was made and revealed not an extrauterine, but an intrauterine pregnancy. There was a peculiar outline presented by this uterus which led me to think possibly pregnancy may have been in one side of a double uterus. It apparently was either pregnancy in one side of a double uterus or pregnancy associated with a small myoma.

DR. JOSEPH B. BACON, Macomb: This paper to which we have just listened was very scientific and interesting. Dr. Dudley is made of the right stuff, for the reason that when he makes a mistake he acknowledges it. I think I can go him one better. I did a large general practice in the country many years ago. I then quit general practice and have been doing nothing but surgery. During eleven years of an active general practice I never saw a single case of ectopic pregnancy. It was a terrible condition for a man to be in that he should be so ignorant as never to have seen or found a case in active practice in eleven years. We had never been taught to know the symptoms. When I go back and think over these cases, I know where I missed them. I have signed death certificates for heart failure and other conditions which were probably cases of ectopic gestation, the patients having bled to death. The cheerful thing that comes to me to-day is that the general practitioner is a better educated man.

General practitioners are better equipped and they are thinking better than we did.

I have had charge of a sister's hospital now for seven years. The first year we opened that hospital we had one case that was brought in as ectopic pregnancy, but we proved it was not. The second, third and fourth years were not marked by a single case, but last year four cases came in, showing that the general practitioners are beginning to think along this line and are diagnosing these cases. That is very encouraging. In the paper a very important thought was brought out and that is this: Roosevelt drew our attention and the attention of the world to many things and among them was race suicide, and we are to blame a good deal as medical men. We should educate our friends and anybody that employs you as a family physician and trusts you is your friend. We should teach our friends and neighbors and those we can influence the importance of putting the mother the very day she suspects she is pregnant under the care of the family physician and he must devote more time to listening to her complaints. It is unnecessary that she shall go to the office for frequent examinations. That would be wrong. But she should go there, or he should be called to the house at any time to take cognizance of the little pains and aches she has so as to guide her through the ordeal. If this were done many more of these cases of ectopic pregnancy would be found in time than is now the case.

There is one thing I want to criticize in the paper, although Dr. Franing did not give it as his own. He quoted from European authorities to the effect that gonorrhea had something to do with the production of tubal pregnancy. Twenty-five years ago in Vienna, a city of two million inhabitants, I took private courses in different specialties, and one was the use of the endoscope. A prominent man connected with the University of Vienna told me that there were but few men in Vienna who did not have a stricture of the urethra. Gonorrhea is very common. It is common all over Europe and unfortunately it is too common in this country, but I would dislike very much to suspicion Mrs. So-and-So as having gonorrhea because she is unfortunate enough to have extrauterine pregnancy, because it is absolutely not so in the United States. Of the cases of ectopic pregnancy I have seen, I do not know of a single one where both man and woman were not absolutely clean.

DR. CHANNING W. BARRETT: In the limited time we have, Mr. President, we can do little more than call attention to some points.

In regard to the etiology of extrauterine pregnancy I want to call attention to an error in Dr. Bacon's statement. He starts out by quoting authorities in Europe who say that all men there have strictures and implying that they are gonorrheal in origin and then implying the strictures are not quite but almost as frequent in this country and then stating that these cases of ectopic pregnancy he had seen were not gonorrheal in origin because he knew the women and men to be "clean." One of the important points in the diagnosis of extrauterine pregnancy and one which points to the etiology is a history of previous pelvic trouble. I have yet to see a case of extrauterine pregnancy that did not have a history of previous pelvic inflammatory trouble and in about 75 per cent. of these cases it was definitely or presumably of gonorrheal origin.

Now as to the diagnosis, there are several points. First, a history of sterility, with many exceptions; a history of previous pelvic disease, with very few exceptions and a history of probable pregnancy with quite a good many exceptions. Some cases of extrauterine pregnancy do not give that history of probable pregnancy. Then, there is a history of nearly always disturbed pregnancy. The patient does not feel like she did with other pregnancies. She has more mental trouble and quite a good many of these patients with extrauterine pregnancy have undertaken to produce abortion. Producing abortion is common, but these patients are more inclined to undertake to produce abortion because of the constant mental disturbance due to pelvic irritation. Then, there may be a history of sharp lancinating pain trouble, indicating a rupture.

A great deal has been said about "the" rupture in these cases. If we study the pathology closely we find that we would better consider "a" rupture rather than "the" rupture, because when a patient has a rupture in extrauterine pregnancy, that does not mean that it is a completion of the process. It may be a slight rupture or it may be complete, and we do not know when it is going to recur, whether in twelve or twenty-four hours or a month later. I would say that complete rupture is the exception. "A" rupture is a common thing.

The author made one statement in his paper to this effect, that when the fetus died it was then like a benign tumor. That is the most erroneous teaching we could bring forward. The extrauterine pregnancy is only slightly less dangerous, if at all, than it is if the ovum is still living. There are very few cases we operate on for extrauterine pregnancy where we find the ovum developed to the time that the pregnancy has gone on. In most cases there is an organized blood clot that has enlarged by concentric layers of blood with an enclosed sac with a small fetus or perhaps with an absence of fetus, yet that has gone on to rupture by reason of a little hemorrhage, a layer of organized blood clot, another hemorrhage and a layer of blood clot, and that has gone on to the point of forcing its way through the wall of the tube and is just about as dangerous as if the ovum was alive. The teaching that a dead ovum is harmless is dangerous because it leads to erroneous treatment. Some practitioners have said that if we could only kill the ovum we would have the patient in a safe condition, and so the x-ray and the galvanic current and needle puncture and injections have been used to kill the ovum. We put the patient out of danger scarcely at all by killing the ovum. The pathology is such that when the extrauterine pregnancy takes attachment in the tubes the patient is in danger from that time until the ovum is removed and the more extensive the hemorrhage the more urgent the removal.

DR. C. F. P. KORSSELL, Chicago: It is impossible oftentimes to be certain of a diagnosis in intra-abdominal and pelvic disease; to illustrate: One year ago this month (May) I was called to open the abdomen of a woman who had missed her menstrual periods for five months, she having a large and tender mass in the right side, uterus slightly enlarged. A diagnosis of tubal pregnancy was made; she consented to an operation. At the operation a large ovarian cyst was found with a pus tube and both were removed. Twenty-four hours after operation the woman developed severe pains which required morphia hypodermically to control, and in a few hours she passed a fleshy mole about the size of a hen's egg. She did well and is now pregnant six months.

DR. COLEMAN G. BUFORD, Chicago: Just a word in connection with the matter of hemorrhage in these cases of ectopic pregnancy. The point has been brought out in this discussion that perhaps the most modern treatment in a case in which ruptured ectopic pregnancy has been diagnosed and the patient is in a shock is to let the patient alone for a few minutes or a few hours, or even for a few days, for the purpose of allowing a blood clot to form and the patient to get in a better condition. I rise to contest that idea, and I should like to ask if any other hidden vessel in the human body would be allowed to remain open and bleed and bleed without any assurance of that blood vessel closing? No! The treatment we should institute under such conditions, if the vessel be open and hemorrhage is going on, is not to trust that vessel to close spontaneously; but if the patient is in a bad condition because of the loss of blood, we should fill the vessels at once by intravenous transfusion, get the patient ready for operation, and if the patient is going to live at all, she will withstand the surgical procedure of opening the abdomen, going down on the tumor and throwing out the fetal mole and tying off the bleeding vessel.

DR. H. EDWARD SAUER, Chicago: I want to call attention to the use of the sphygmomanometer with a view to determining when to operate on these cases of ectopic pregnancy that are in collapse. From the work of Crile, hemorrhages in dogs on which total hysterectomy has been done, without ligation of the vessels, will stop, even if the dogs are found to be entirely pulseless and look as

though they are going to die, they get perfectly well and the blood clot will absorb or disappear and the abdomen be found free from the blood clot. When a patient with ruptured ectopic pregnancy is *in extremis*, when she is in collapse, it is not the proper time to operate. If, at this time, the sphygmomanometer is brought into play and the patient watched for half an hour or an hour, so that blood-pressure can be determined, when the blood-pressure gets up to 110 or 120, then it may be considered a favorable time to operate on that patient, but not when she is low down and in collapse.

DR. E. C. FRANING, Galesburg (closing the discussion): I will try to pick out some of the points that have been referred to in the discussion and which have a practical bearing on this subject.

As to the difficulty of diagnosis in these cases of ectopic gestation, it was not my intention to paint a picture of easy diagnosis, because those of you who have encountered these cases know that the diagnosis is not easy in many instances. There is nothing in the world harder to diagnose than some cases of extrauterine pregnancy. You may diagnose certain surgical conditions in the pelvis, but to differentiate them from extrauterine pregnancy is a thing that is hard to do and I am sure you will find that your mistakes will pretty nearly aggregate 25 per cent. after you open the abdomen. I want to paint the picture that we, as general practitioners, must be on the alert, and if we can diagnose these cases early and operate on them promptly we will save lives by so doing.

I am glad Dr. Bacon reported the case he did, because I happened to know the attending physician in that case. The patient had been under the care of physicians three weeks before and she begged to have a normal delivery produced, thinking there was a normal child. The woman had repeated chills and the diagnosis of a surgical condition was not made. It was not necessary to make a diagnosis of extrauterine pregnancy, but it seems to me a diagnosis of a surgical condition could have been made. These are the cases with conditions we should keep in touch with and the question should occur to us whether there can be such a thing as ectopic pregnancy when we have these conditions to deal with, because I think that quite often we are neglectful in our examinations and overlook such a condition as that. By overlooking these things we are likely to lose patients while we are making these mistakes.

As to the time of operation, whenever the patient is in the best condition you can put her, for the purpose of operating on ectopic pregnancy, it matters not what her condition is, you owe it to her to operate. I cannot off hand give you statistics, because it would have made my paper too long had I put them in. In looking up the literature you will find several cases reported by good authorities in which the patients absolutely bled to death within four hours from the time of rupture. We do not know what patient is going to bleed, therefore, a patient is never in a better condition in ectopic pregnancy than at the present time. If in operating the simplest thing that can be done is done you will not shock the patient very much. The operation has been done a great many times under local anesthesia. You can tie the vessels off and leave the patient without handling the clots or bowel. Stop the bleeding; that is all that is necessary, and the abdomen will take care of the rest.

A PRACTICAL MEASURE IN THE PROPHYLAXIS OF POST-OPERATIVE CYSTITIS *

E. C. DUDLEY, M.D.

CHICAGO

This communication has reference to prophylaxis of that cystitis which frequently follows manipulations and surgical operations in the pelvis. The infection is usually of the catarrhal variety and ordinarily

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subsides in a few days under routine treatment, or no treatment at all. In not a few cases, however, it continues with more or less virulence, acuteness and persistence, and may become permanently chronic. This occurrence, distressing to the patient, and humiliating to the surgeon, is caused by any or all of the bacteria which are known to infect the bladder, and is not to be regarded, therefore, as a special form of cystitis. These bacteria become active under predisposing trauma, more frequently, perhaps, after minor than after major operations. Of the minor operations, perineorrhaphy, for some reason which defies analysis, is an especially frequent factor.

Notwithstanding the usual conviction that the unclean catheter is generally regarded as the medium by which bacteria enter the bladder, and by which small trauma may be caused there, it is yet an observed fact that even with gentleness and extreme aseptic care in passing the instrument, the disappointing result of an infected bladder may follow. Indeed, the hands, catheter, and other appliances may be demonstrably aseptic, and yet the external genitals are so difficult to clean that some bacteria may be taken up from the vulva and carried into the bladder on the catheter. Moreover, gentleness and asepsis in catheterization, however imperative, do not cover the ground, for numerous aggravated cases of post-operative cystitis occur in which no catheter has been used and which therefore must be attributed to other causes, perhaps lessened resistance to bacteria already in the bladder. Consideration of these causes would involve anatomical study of the utero-vesical ligaments, the bladder musculature, the epithelial layer, the overlying peritoneum, the rich vascular supply from the superior, middle, and inferior vesicles, with their accompanying lymph vessels, which lymph channels empty into the pelvic glands. Study of the sympathetic nerves from the hypogastric plexus and the sensory nerves from the third and fourth sacral, consideration of adjacent organs, routes of infection by which bacteria may enter the bladder, and of much bacteriology, but these subjects are not essential to the present purpose.

Until about two years ago, both in my hospital and private work, were not infrequent instances of post-operative cystitis, which occurred very often in the non-catheterized as well as in the catheterized cases. I am convinced that the catheter is held responsible for much cystitis of which it is entirely innocent. The older men here who were students before the antiseptic and the aseptic age perhaps will recall the fact that customarily in office treatment of gleet and urethral stricture, the same sound was passed in case after case without adequate disinfection, and that medical students, in order to acquire manipulative skill, often passed sounds on each other and themselves, and that such exposure seldom resulted in infection. In the treatment we had recourse to routine flushing of the bladder daily with saturated boric acid solution, drawing off this solution and then throwing into the clean, empty bladder four drams of 20 per cent. solution of argyrol in water, and leaving it there to be passed off with the next urination. This procedure was supplemented by the use of urotropin and other drugs and by the free drinking

of water. All this was quite elementary and ordinary. Now remains to be mentioned the prophylactic measure, also elementary and ordinary, which is to apply the same measures in a preventive relation precisely as they were used when infection was actually present.

During the past two or three years in all operative cases, indeed in non-operative cases in which the catheter was used, I have followed its use with instillation of boric acid and argyrol solution. Moreover, whenever I have especially anticipated post-operative cystitis, as in cases of irritable bladder, or cases of former cystitis, I have had the catheter passed at stated intervals, and the boric and argyrol solutions used. This tentative catheterization may be quite essential since pelvic operations are apt to be followed by partial retention, and since partially retained urine is especially apt to give rise to cystitis. After perineorrhaphy, for example, the rule that the catheter should be avoided when the patient can relieve herself holds good only when natural urination is complete.

Since I have applied the routine treatment of post-operative cystitis to the prophylaxis of cystitis I have observed unspeakable freedom from infection, and corresponding relief from a frequent distressing and humiliating sequel to pelvic surgery. The results are fully as satisfactory as are those following the application of a silver solution to the eyes of the new born. I am prompted to make this record, although by comparison with the more dramatic, more entertaining exploits of the operating room and the laboratory, the matter may appear quite trivial.

EMPLOYMENT OF RADIUM IN THE TREATMENT OF CANCER, ANGIOMA AND KELOID *

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PARIS, FRANCE

RADIUM CONSIDERED AS AN AID TO SURGERY IN THE TREATMENT OF CANCER

The destruction by burning, which is chiefly sought for by many radiumtherapists, is not of great interest, since similar results can be obtained by many other agents.

The most interesting and important aspect of radiumtherapeutics is the selective action of the rays. Here radium plays the rôle of a subtle modifying agent, which goes to seek out those elements which are the most sensible to its action. Thus, all tissues are not suitable ground for this selective power; the most favorable are cancer, angioma, keloids, eczema, and other diseases.

The exact meaning of "selective action" is that a certain quantity of measured radio-activity can modify the cancerous cells and arrest their malignant evolution without producing any modifying action on the

* Abstract of a paper read (by request) before the meeting of the Chicago Medical Society, Oct. 5, 1910.

normal cells surrounding the cancer, thus enabling a cancer to regress and disappear without producing on the surface any signs of irritation or inflammation.

This selective action can work either on the superficial or the deep-seated pathologic tissues, the rays possessing the power of traversing them. The determinative cause between the caustic action which burns, destroys, and the selective action is the *quantity* of rays absorbed in a given time by the tissue. If composed of slightly penetrative rays and the quantity be great, we have a superficial necrosant action; but let the quantity be measured we can have a selective action without any irritation. If composed of superpenetrative rays and the quantity be great, we have a deeper necrosant action, but let the quantity be measured we can have a selective action in the deep-seated tissue without any irritation.

Dr. Wickham showed a series of projections representing histologic sections of fragments taken from a voluminous cancer of the breast (epithelioma lobulated) where the selective action was demonstrated. In this case the selective action was visible on fragments taken even from a depth of nine centimeters, a depth which up till now had not been deemed affectable by the radium rays. The depth at which radium works depends on the quantity of radioactivity employed, which in this case was 19 cgr. of pure radium, applied for forty-eight hours in the same place.

Dr. Wickham lays stress on the importance of acting simultaneously on or in several points of the tumor by his "crossfire" method in order to concentrate the greatest possible quantity of rays on the points in the deep-seated tissues and to act with greater homogeneity.

He showed projections of cases treated in collaboration with Dr. Degrais, of grave cancer, angioma and keloids, of which the regressions are very remarkable.

The methods for the treatment of cancer by radium that he has established with Dr. Degrais, joined to the methods of other radiumtherapeutists, have led Dr. Wickham to the following conclusions:

1. The excellence of the results cannot exist without long experience and a profound knowledge of these methods, and principally without a great quantity of radium.

2. In the majority of cases surgery should be associated with radium.

The radiumtherapeutist, in the presence of a case of grave cancer, must first consult a surgeon in order that the patient may not be deprived of the prompt help of surgery. If surgery is confronted with a case difficult or impossible to operate on, radium can be applied *beforehand* in order to prepare the ground or *afterwards* to consolidate it, or in combination. That is that surgery ought to be utilized for making the perforations, incisions or partial extirpations which diminish the thickness of the tissues and render more effective the action of the radium introduced into the wounds.

Surgery should be also employed for opening a way for radium through artificial orifices or for conducting the tubes of radium to the tumors through the natural orifices. It is under such conditions that Dr. Wickham has treated cancers of the esophagus, of the neck, of the

bladder, of the intestines, of the rectum, of the larynx, of the uterus; subcutaneous cancers, and deep-seated cancers, cancers of the breast, etc. In all these branches Dr. Wickham related the history of several cases which, according to usual theory, would have succumbed in two or three months, but are still after one year having their condition ameliorated. Surgery should develop its ingenuity for finding operative means of helping the radium apparatus to penetrate into the seat of the tumors, above all when these are difficult of access.

3. The tumors should be inundated by the rays, and to this end the apparatus chosen should be the most powerful possible, and also numerous that they may be employed in opposition, either on the exterior, or after perforation and introduction of several apparatus. If there is any skin, mucous membrane, blood vessels or nerves to protect, there must be placed between the apparatus and the tissues metallic screens (aluminium, lead) whose thickness varies in proportion to which radioactivity is needed, and in proportion to the power of the apparatus and the duration of the application. This is the method of filtration that Dr. Wickham inaugurated in 1905, and it is very useful to act strongly at a depth without injuring the surface. On the quick of the tumors the apparatus can be employed with very light filters in order to utilize the maximum of rays.

4. Like surgery, radium has neither an action on the general state, nor can it prevent recurrence and metastasis. This should be insisted upon in order that the term cure, which on principle should be avoided, may be attributed only to the regression of the tumor itself, so that there may be no risk of deceiving either the patients or the doctors.

5. Even this limited radium is a valuable weapon. In our struggle against cancer we are so badly armed that any new therapeutic agent if it be in some way really effective, as it is in this case, should be taken into serious consideration.

By the help that radium brings to those suffering from cancer, it occupies a high place in our esteem and is the principal reason of the gratitude we owe to the discovery and scientific works of savants like Curie, Ramsay and Rutherford.

EMPLOYMENT OF RADIUM IN THE TREATMENT OF CANCER AND OTHER TUMORS (SUCH AS ANGIOMA, KELOIDS, ETC.)

Dr. Wickham dwelt on the fact that the utility of radium goes very much farther than the surface action and skin action; this being demonstrated histologically and clinically by a large number of lantern slides. It is true that radium has a very useful effect in certain cases of rebellious eczema, of keloids, of flat angiomas, of superficial cancers such as those situated on bones and cartilages, those developed in scars or surrounded by lymphatic inflammation; also in cases where the cancer is situated inside the nose or on the conjunctiva. All these cases being specially difficult to cure by the ordinary means, radium can be tried and sometimes succeeds when other means have failed; therefore this part of radiumtherapy is very interesting and worthy of a special lecture, but Dr. Wickham's aim, to-day, is to show that radium can act in larger fields,

which action depends on three qualities of radium, these qualities being perfectly distinct one from another, and their association giving to radium a special and unique place.

1. The first is a biologic quality. The rays being able in certain given doses to act on pathologic cells, such as cancer cells, angioma, keloids, by *selective action*; modifying these cells without having the same action on the normal and other cells of the vicinity.

2. The second quality of radium appertains to pure physics. It consists of a great power of penetration of some of its rays, which allow, firstly the method of filtration, and secondly the selective action to show its effects in the depth of voluminous malignant tumors and Dr. Wickham showed a series of histologic slides demonstrating that the favorable changes of cells are met with farther than a depth of 9 centimeters.

3. The third quality is of a mechanical kind. It consists in the possibility of concentrating in very minute apparatus a very powerful radio-activity. This diminutiveness allows the introduction of powerful apparatus into the depth of the tumor and into different parts of the body.

The maximum usefulness of these combined qualities becomes evident in the treatment of malignant tumors, specially lymphadenoma, mycosis fungoides and giant cell sarcomas, also the epitheliomatous growths and glandular growths. It is owing to this combination that radiumtherapy is the most appropriate treatment in cases of grave, deeply seated cancers, where at all events it becomes the only auxiliary that surgery can employ as an aid. The lecturer insisted on the fact that surgery and radium must be frequently associated. If a cancer is accessible to the knife but is difficult of operation, radium can be employed first to diminish the virulence of the part and render it easier of operation.

If the cancer is accessible to the knife but at the same time is impossible of extirpation, surgery can prepare the way for radium, in making perforations, incisions, and partial excisions, thus enabling several of these small powerful apparatus to be conveyed to the interior of the tumor.

If the cancer is inaccessible to the knife, an artificial passage may be made to reach it and radium can be conducted by it to the cancer. It was in this way that Dr. Wickham treated a cancer of the pylorus through a gastric fistula, which was kept open after operation of gastro-enterostomy.

If the cancer is situated in a natural conduit where the endoscope may be utilized radium can be brought into close contact and in this way cancers of the esophagus, of the rectum, of the neck of the bladder, and of the uterus have been treated in a satisfactory way; in fact, cancer of the uterus is one of the best grounds for radium, because it is the only auxiliary to surgery which can freely act there, as it can be introduced inside the tumor itself.

In breast cancer, radium does excellent work. In some cases where the patient had refused surgical extirpation Dr. Wickham tried radium with great success. One of those cases, in a lady aged 78, and considered absolutely inoperable, was treated by radium at the beginning of Novem-

ber, 1907, and after regression did not recur. The patient is still in good condition. Many other cases have been greatly benefited by radium.

In fact, the breast is an excellent region for inundating a tumor by the rays, as it can be surrounded by powerful apparatus and this multiplied "cross-firing" gives an excellent result, because a great quantity of rays is absorbed, and because the tumor is acted on, in an homogeneous manner; and with the help of filtration this action is conducted without any burning of the skin. All this leads to the conclusion that when surgery finds itself powerless, radium can step in as a really useful ally, but the results obtained will be good only if the apparatus are numerous, powerful and used with the proper technic. The mouth is not so good for treatment because the technic which can be employed on other parts is impossible here, as an apparatus cannot be placed for a sufficient length of time, and the necessary screen for filtration will render it too bulky.

Each time Dr. Wickham's cross-fire method can be employed it must be made, for it acts in an homogeneous manner, on all parts of the cancer, and this is important to avoid the risk of giving an impetus.

The filtration of the rays through screens of aluminium, lead, or silver of different thickness, modifies the quantity and the quality of the radiation issued and permits us to act at different depths and with different strengths, and this filtration is a great progress in radiumtherapy.

Thus we see that the technic of radiumtherapy is both difficult and complex, since the operator has to deal with four factors of them capable of *infinite variation*:

1. The radio-active source.
2. The screens or filtrage.
3. The duration of application.
4. The sensitiveness of the pathologic tissues.

To obtain the best advantage of the apparatus at disposal, a wide experience is needed as well as a very powerful and a very well made instrumentation.

After having dwelt on the beneficial effects of radium, and shown some splendid results on enormous angiomatous tumors, keloids and cancers, Dr. Wickham finished his lecture by exhorting his audience not to forget that these effects were local and limited and, in regard to cancer, not free from recurrence and metastasis, and while appreciating them fully one must not allow himself to be led into exaggeration.

Radium in regard to cancer must be regarded merely as an agent capable either by itself or as an adjunct to other means, of bringing relief to the patient by stopping hemorrhage, secretions and producing local and sometimes entire regression of tumors; these results of course being temporary, but sometimes of so long duration that they consist not only in relieving the patient but in prolonging his life for years. One must consider that, since we are so weakly armed against cancer, when a new weapon, even if with limited action, is offered to us, such as radium, we must accept it (if wisely employed) as a great benefit.

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DISCUSSION

DR. WILLIAM ALLEN PUSEY: I am sure I express the feelings of the members present to-night when I say how much I appreciate this demonstration of Dr. Wickham. As Dr. Ferguson has said, Dr. Wickham is a pioneer in the use of radium and he has brought to us in the study of radium a rare combination of qualities. In the first place, he is one of a group of distinguished men who have made Paris and San Luis Hospital a mecca for dermatologists. He has gone from superficial conditions to deeper and he has known what he is doing as he has gone. In the second place, he is one of those rare men who combine enthusiasm with scientific honesty and sanity. His results have been what we see to-night.

Dr. Wickham is not, I believe, distinctly a pioneer above other men in the use of radium, but he is especially worthy of a place of eminence because of the way in which he has developed its technic. Sir Malcolm Morris, in the introduction to Wickham's book, says that radium therapy can well be divided into two periods—the pre-Wickham era and the post-Wickham era. Dr. Wickham has given radium a definite, accurate technic, and that is to my mind the very great importance of his work. Other men have worked with filters, but Dr. Wickham has especially worked over the subject until he has gotten accurate, definite knowledge as to what can be done with various filters with definite quantities of radium. His other special contribution to the technic has been his cross-fire method by which he attacks pathologic foci at various points and leaves them without any position for defense, as it were. But his very great contribution to the subject has been due to the painstaking experiments and work with the excellent facilities of using radium.

As to the results he has achieved they speak for themselves. I think they add one more important chapter to the evidence of what can be done in certain pathologic conditions by the use of radium energy. I do not feel that its action should be compared with other forms of radium energy, but regardless of the comparative results from radium or other forms of radium energy, these contributions are very important as showing what results can be obtained from intelligent, painstaking and long continued experiments in the use of a new agent. There are certain particular advantages which radium possesses over the other forms of radium energy and that is we can use in this way the x -rays. These are absolutely stable and definite rays of energy which only vary infinitesimally from year to year, so that after your data have been accumulated from experience you can work with accuracy. That has been a great improvement in the use of radium and one of the great contributions of Dr. Wickham has been the establishment of these facts. The second is that radium can be used in the cavities of the body, as Dr. Wickham said yesterday, when we were not discussing the relative merits of anything, one cannot put a Crook's tube into the uterine canal or urethra. And that is undoubtedly true.

There is no need to speak further of caution in considering the results in extensive malignant growths from radium, because Dr. Wickham has done this. But my chief function this evening is to express our great gratification at his paper.

DR. HELIODOR SCHILLER: During the last few months Dr. Pierce and I have made some experiments in the x -ray laboratory of the Michael Reese Hospital by which we proved that we were able to make certain substances radio-active through the direct influence of the x -rays. We exposed certain substances to the direct rays for certain minutes at a time and found we introduced into those substances properties very similar to those of the x -rays. These substances were very active on photographic plates. They were also active on the fluoroscope, showing a highly penetrating power. We could produce in from four to five hours marked impressions on the photographic plates with these substances and if we injected only a few drops of them into guinea-pigs we could get results on the photographic plates, demonstrating the power of these substances and getting action on the platino-cyano-barium screen. In injecting these substances,

after making them radio-active, into animals, we found animals which were not affected at all by the substances before exposing them to the x -rays, became typically sick. Their legs were paralyzed, but they recovered. After the substance had lost its radio-activity, as shown by the photographic plates, it takes from thirty to thirty-six hours for the substance to lose again its radio-activity. When we injected this substance into the animals the animals died. We were able to make these substances radio-active, and I believe that we will be able to utilize these substances for certain purposes, taking the place of the high-priced radium or radium salts.

DR. WICKHAM (closing the discussion): I have nothing further to say other than to thank you most heartily for your kindness and courtesy. I thank you with all my heart for the manner in which you have received my paper and for the marked attention with which you listened to me.

OBSERVATIONS ON TWO THOUSAND BLOOD EXAMINATIONS FOR *HEMAMEBA MALARIAE* *

T. M. ADERHOLD, M.S., M.D.

ZEIGLER, ILL.

1. *Necessity of Making Blood Examinations.*—A short time of practice in a malarial district in southern Illinois and consultations with the physicians of that locality made evident the following facts: 1. It was the custom to say that all diseases were complicated more or less by malaria. 2. To attribute the chills complicating typhoid fever to malaria. 3. To attribute more than one chill in pneumonia to malaria. 4. To attribute most infections following surgical operations to malaria. 5. To call all cases of puerperal infection malaria. 6. To say that the aches and pains of chronic rheumatism were due to malaria. 7. To say that the chills of tuberculosis of the lungs were due to malaria and not to diagnose this disease until it was far advanced. 8. To often attribute the jaundice of gall-bladder disease to malaria. 9. To say that the chills of follicular tonsillitis were malarial.

It thus became evident that to clear the diagnosis of any disease in that locality it was first necessary to eliminate malaria or prove its presence by finding the organism in the blood. With this in view blood examinations were made in every case where malaria was suspected either as the original disease or as a complication of some other disease. Two thousand and fifty-six examinations in all were made between Sept. 7, 1905 and Dec. 7, 1909.

All records were made from stained specimens although fresh specimens were often made for study. The stain used in most of the examinations was azure II, as is given in Wood's diagnosis. Five interns assisted in the work. Three hundred and sixty-eight cases in all were found. A number of examinations were made in certain cases for study purposes. It will thus be seen that about one person in five had malaria who was thought to have it.

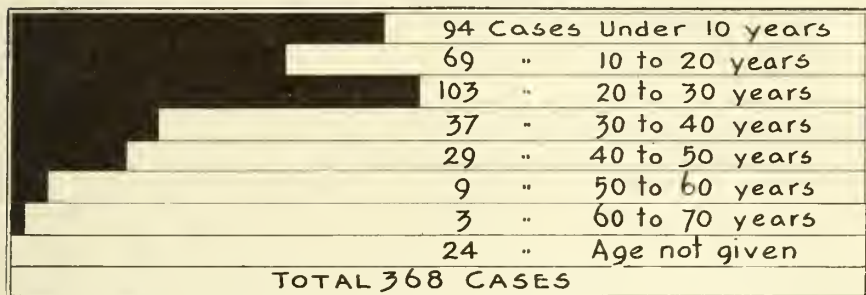
* Read at the Sixtieth Annual Meeting of the Illinois State Medical Society, held at Danville, May 17-19, 1910.

The general results of these examinations and study of the patient showed:

1. That malaria was not prevalent in that community as much as it was thought to be by the profession.

2. That by making a careful examination of the patient the cause of the chills could be found in follicular tonsillitis, tuberculosis of the lungs, pneumonia, and gall-bladder disease.

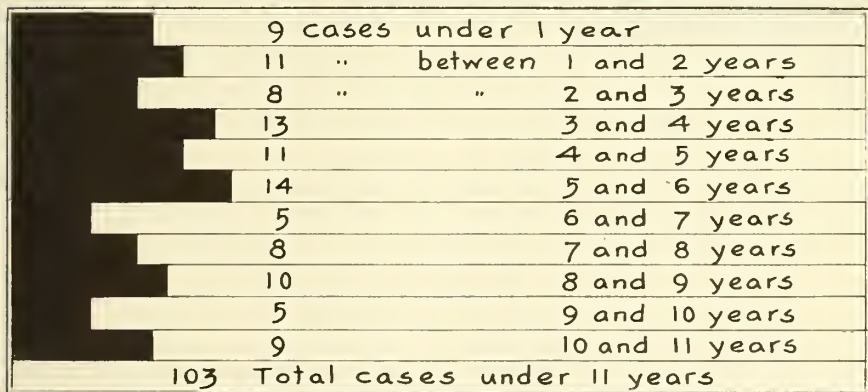
GRAPHIC REPRESENTATION OF CASES WITH REGARD TO AGE



94	Cases Under 10 years
69	" 10 to 20 years
103	" 20 to 30 years
37	" 30 to 40 years
29	" 40 to 50 years
9	" 50 to 60 years
3	" 60 to 70 years
24	" Age not given
TOTAL 368 CASES	

3. That by writing a careful history of the other cases in addition to the careful physical examination and studying the complications of diseases like typhoid and pneumonia that have chills as a complication, a cause for chills in the other cases could often be found.

GRAPHIC REPRESENTATION OF OCCURRENCE OF CASES IN THOSE UNDER 11 YEARS OF AGE



9	cases under 1 year
11	" between 1 and 2 years
8	" " 2 and 3 years
13	" 3 and 4 years
11	" 4 and 5 years
14	" 5 and 6 years
5	" 6 and 7 years
8	" 7 and 8 years
10	" 8 and 9 years
5	" 9 and 10 years
9	" 10 and 11 years
103 Total cases under 11 years	

ORGANISMS FOUND.

The ordinary tertian, estivoautumnal tertian, and the quartan were the kinds of organism found and recognized. If others were present they passed unrecognized. Malaria was found six times complicating some surgical illness, four times complicating pregnancy, two times complicating typhoid and once complicating parenchymatous nephritis.

Only one death occurred in the series of 368 cases. This was in a child about 18 months old that had just come to town. The diagnosis not having been made until a few hours before death, where the blood was examined.

2. *Diagnosis.*—The finding of the hemameba malariae in the blood is the only diagnosis of malaria. No other diagnosis should be thought of or accepted by competent medical men. The blood examination should be made from a stained specimen rather than from a fresh specimen, since the stained specimen alone makes a permanent record which can be gone over by any one investigating the case afterwards.

To illustrate the unreliability of clinical symptoms the following case is given.

Mrs. O. J. Z., married, aged 29 years, uneventful girlhood, menstruation always regular except when interrupted by pregnancy. Has one child aged 2 years. Present pregnancy characterized by good health. A trained nurse who

DIAGRAM SHOWING OCCURRENCE OF CASES BY MONTHS
362 Cases, Sept. 5, 1904 to Sept. 6, 1909

	7 Cases in January
	8 " " February
	15 " " March
	19 " " April
	32 " " May
	15 " " June
	37 " " July
	66 " " August
	97 " " September
	53 " " October
	8 " " November
	5 " " December

was a relative was in attendance at confinement. Delivery was normal. One internal examination was made after the nurse had prepared the parts with soap, water and lysol. Rubber gloves were used which had been boiled for five minutes immediately preceding the examination. On the third day the patient was taken with a violent shaking chill which was followed by a rise of temperature to 103. The temperature subsided after free perspiration. The next day her temperature was below 100. On the second day she had another chill followed by a temperature of 103. This also subsided after free perspiration. There was nothing foul about the lochia up to this time. This made the case look like tertian malaria, the patient having had two violent chills on alternate days and in each case the temperature subsiding after free perspiration. On the following day the lochia became foul thus revealing the nature of her illness. Her leukocyte count was 14,500. In all, four blood examinations were made for malaria and none was found. Two were made before this and two after this time. Ergot and hydrastis were given and the patient recovered. No quinin was given. This case resembled malaria more than any other in the 368 cases found in these examinations, and shows that even two chills coming on alternate days with a fall of temperature between cannot be taken as a diagnosis of malaria.

warm season is probably from two to six weeks and during this time their chance of biting a person who had malaria is relatively small.

b. If the cases under consideration were re-infections and not relapses the occurrence of cases and the presence of the anopheles would more closely coincide. As it is, the greatest number of cases occurs in August, September and October and the greatest number of anopheles occurred in October.

c. Three cases that moved to non-malarial countries relapsed the following season, thus proving that the organisms will remain in man over winter and produce no symptoms during that time.

d. By observing the charts it will be seen that those who had malaria one season had it earlier the next season in general than those who were then having it for the first time.

4. *How Long Does It Take the Organism to Disappear From the Blood Under 24 to 30 Grains of Quinin Daily?*—For the purpose of verifying or disproving the general belief that a few grains of quinin would make the malarial organism disappear from the blood and thus prevent its being found with the microscope, the writer undertook a series of observations.

All cases where observations could be made were given quinin at the rate of 24 to 30 grains per day and the blood examined at various intervals 4, 6, 12 and 24 hours to see when the organism would disappear.

In observations on thirty-two cases it was shown that it takes from one-half to two times the life cycle of the parasite, that is a tertian infection will disappear in 24 to 96 hours. If a patient had a mild attack the organism would disappear with the full development of the young parasites in the blood at the time of beginning the quinin. If the attack was severe some young organisms would be found in the blood after the full development of the existing group and these would reach their maturity but their spores would not develop under such cinchonization. This was true for ordinary tertian, estivoautumnal tertian, and quartan parasites. These observations therefore demonstrated that the malarial organism can be found in the blood from 24 to 96 hours after the beginning of quinin, and that the general impression that a few grains of quinin will make the organism disappear from the blood in a few hours is an error.

5. *Observations in Obstetrical Cases.*—In this series of 368 cases, four cases were found complicating pregnancy. All were given quinin, 24 to 30 grains per day. The ecobolic action of quinin was ignored and to support this action the following quotation is given from Wood's Therapeutics (13th edition, pages 568, 569). The answer to the question, Has quinin ecobolic qualities, should be made out in three different directions: 1. Is there any evidence of quinin producing abortion in healthy women or in females of the lower animals? The answer to this is that quinin is incapable of producing abortion during quiet pregnancy. 2. How strong is the evidence of its producing abortion in women suffering from ague? The answer is: But it is incredible, in the face of daily experience, that even the largest therapeutic doses of quinin are abortifacient in malarial fever or in health. 3. What is the evidence regarding the action of quinin

during labor? The answer is: That quinin in full doses (10 to 20 grains) is a stimulant to uterine contractions. One case gave birth to a seven months child during the time that she was taking quinin.

As this was her second child and her first one was also a seven months delivery without any apparent cause the quinin might not have had any thing to do with it. Another case gave birth to a full term baby while taking quinin for malaria, but as this was at full term it can again be said that quinin might not have had any thing to do with it.

GENERAL CONCLUSIONS.

1. To avoid errors accept nothing but the microscopical diagnosis.
2. Anything which lowers the vitality of the individual, whether fatigue, heat, cold or other disease, predisposes him to malarial infection, or to a relapse if he already harbors the parasite.
3. In the locality where these observations took place malaria was not as prevalent either as a primary disease or complicating other diseases as was thought to be by the profession of the locality.
4. If a person has more than one attack of malaria within a year the attacks after the first one are more liable to be relapses than reinfections.
5. All malarial patients should be advised to take three months treatment.
6. Malaria complicating other diseases should be treated as though no other disease was present until the acute symptoms subside and then the treatment should be modified.
7. A promise of cure in malaria should not be given until the patient has been more than one year without symptoms.

DISCUSSION

Dr. Everett J. Brown, Decatur:—This is a most interesting paper, and shows an immense amount of research work. No one who has not done work with malaria, realizes the amount of work necessary to make these repeated examinations. The doctor has brought out one important point which is new to me. I have always had the idea that after taking quinin it is difficult to find the parasite in the blood from the peripheral circulation. I have always endeavored to make blood spreads during the paroxysms, or afterwards, and before the exhibition of quinin. I would like to have Dr. Aderhold state if he has made any investigations to discover the anopheles mosquito in the room where the patients lived. I have done that several times and have found anopheles on the walls in rooms occupied by malarial patients. The anopheles is easily seen by the naked eye, as it is much darker than the culex, which is the usual variety in Illinois, and it stands out from the wall nearly at right angles, while the culex rests parallel with the wall.

Another point about which I would like to hear from Dr. Aderhold is with reference to symptoms other than those of chill and fever. I have always made it a practice to do two things in treating children, namely, to look at the throat and to examine for a palpable spleen. I have been led to believe that it is a very good point in diagnosis to feel for a palpable spleen in every child. I was called once to see a child, aged 2 years, that had repeated convulsions, the last convulsions being followed by hemiplegia with aphasia. The case was regarded as one of meningitis, but on examination I found a very large spleen, and a blood examination showed the tertian parasite. The child quickly recovered entirely from the hemiplegia and all symptoms under the use of quinin.

Dr. James F. Pfeifferberger, Alton:—I want to compliment Dr. Aderhold on his excellent paper, and would like to ask whether he found malarial plasmodia in any of the newborn children he delivered from these cases that had active infection at the time. Also whether or not the so-called malignant forms of estivo-autumnal type of fever show any response to quinin?

A Member:—I would like to ask the essayist if he has observed any cases of amblyopia or blindness from the use of quinin?

Dr. Edward H. Ochsner, Chicago: Dr. Aderhold has brought out in a very emphatic way the importance of making a diagnosis in all cases where malaria has been suspected. In the southern part of the state there are hundreds and thousands of cases that are considered malaria, but are not malaria at all. That is a point which the essayist has not emphasized enough, but which, I am sure, is very important. Another important point is that quinin is not only not a useful remedy, or a harmless remedy, but it is distinctly a very dangerous remedy to give to a patient who is suffering from septic infection. We have gone on the theory that because quinin cures a chill in malaria, it is useful in all forms of chills. There is no conception in medicine that is more erroneous than that. We are beginning to learn slowly that a remedy which may be useful in fever of one kind may be distinctly and absolutely harmful in fever of another kind. Some years ago this point was impressed upon my mind very forcibly when I saw a patient in consultation with a pyemia following appendicitis. The patient had chills. The attending physician argued that because quinin was good for chills and in malarial fevers, it was also good for pyemic chills. Accordingly, he gave this patient hypodermic injections of quinin, and I never saw a patient go to pieces as rapidly as that patient did. It seemed to act on him like a violent poison. This is due to the fact that the resistance of the patient to different infections is different, and different remedies influence the resistance differently, depending upon what the infection or the disease is caused by. For instance, we believe that potassium iodid was a very good remedy in syphilis, but we now also know that potassium iodid is a dangerous remedy in other infections, and so on through the whole category.

I would like to hear from Dr. Aderhold as to what experience he has had in the septic cases. In those cases that have been given large doses of quinin, I think Dr. Aderhold, who has made such careful observations as he has for so many years, can give us clinical evidence that will be more valuable than the evidence of one individual case that each individual doctor may cite.

Dr. S. E. Munson, Springfield:—I wish to commend Dr. Aderhold's paper. My attention was first drawn to his work in malaria at the meeting of the Illinois State Medical Society held at Rockford and probably many of you remember some of the beautiful specimens he exhibited of his work at that meeting. That was the first time I had the opportunity of making his acquaintance. By some correspondence with Dr. Aderhold, he informed me that when he had some interesting cases in the hospital at Zeigler he would wire me. He kindly did so and I immediately went to his place by train, where I found one case, like the hospitals in Europe, where malaria is so seldom observed, no quinin is given until the particular form of infection is studied and determined. In this case no quinin was given. During my stay with the doctor I was charmed and delighted with his work. He impressed me as a man of peculiar and careful observation, and from the literature which I have read on this subject, I should say it is very seldom that any one accomplishes as much as he has in this particular field of labor.

In regard to the use of quinin in cases of pregnancy, I had a case of tertian malaria in a woman seven months pregnant, who had a weak and susceptible stomach, so that it was impossible to give her quinin by the mouth, or in sufficient amount by the rectum to control the paroxysm. We gave her fifteen grains of quinin hypodermically every twenty-four hours, the attacks stopped and there was no indication of a miscarriage. This woman went on to term and was delivered of a normal child.

Referring to Dr. Aderhold again, I will say that he had the mosquitoes there in a cage. He had gone out in the pools and caught the young ones, and you could observe the different types as they lived in their habitat, the water. It was certainly very interesting to me.

Dr. John F. Hultgen, Chicago:—I was delighted to hear and see the results of Dr. Aderhold's work upon such an enormous number of malarial patients. What impresses me most is the fact that he has done such good scientific work in general practice. Scientific work, according to the definition of a great scientist, consists in the careful, conscientious recording of facts. The correlation of these facts constitutes scientific medicine. That is what I think Dr. Aderhold has done and has shown us.

There is one point I would like to call attention to. The doctor did not attempt anything new in regard to the cytology of the blood, nor in the relation between the total count and differential count. In such cases as Dr. Ochsner mentioned, I venture to say that it would not be difficult to decide in favor of a pyogenic cause. In malaria we have, as a rule, moderate so-called mixed leukocytosis, which is peculiar, and is composed partially of lymphocytes and partially of polynuclears, ordinary leukocytosis being a polynucleosis except in malaria or in young individuals. In the differential picture we have a diminution of the polynuclears, sometimes as much as forty-eight per cent. polynuclears, forty odd per cent. small mononuclears, and as many as eight to twelve per cent. of large mononuclears. There is usually an eosinophilia. No one has established the fact that there is polynucleosis following upon or during a paroxysm. Quinin heightens the polynucleosis, in this way: it acts somewhat like the α -rays in killing off the most vulnerable elements of the white blood, i. e. the polynuclears, which are necessary for the counteraction of the toxins in malaria.

A Member:—I would like to ask Dr. Aderhold as to his experience with reference to quinid idiosyncrasy. I remember one patient, whom I saw in southern Illinois in 1904, to whom I gave a grain and a half of quinid which threw him almost into a fit. He scratched himself to pieces, and this continued for four days, but he never had a recurrence of the malarial paroxysm from this time on.

Dr. T. M. Aderhold, Zeigler (closing the discussion): In answer to the question which was asked by Dr. Brown regarding the finding of anopheles in the room, I will say yes, I have found live anopheles in the rooms at Zeigler every month in the year, even finding them in the winter. You will find them in unsuspected places, as, for instance, near the dresser in the room, where the room is warm, or where the sun is shining you will find them flying towards the window.

As to other symptoms besides chills, I will say that some of our most instructive work was in children who did not seem to be doing well. They had large bellies and looked yellow. Some of them had a little fever, and others practically none. Their spleens were large, and examination showed they had the malarial parasite in the blood, and quinin would cure them rapidly.

Regarding meningitis and malaria, I had one very instructive case. In a child, eighteen months old, the trouble began with a violent chill and spasms. It looked like a severe malarial chill. Examination one day showed no parasite. Examination the next day showed no parasite. Further observation showed that the case was one of anterior poliomyelitis, and malaria had nothing to do with it. It is an important thing in the newborn. The woman who gave birth to these two children I mentioned in the paper did not have the parasite in the blood.

As to the malignant forms of the disease and the administration of quinin, I wish to say that I have had no case which did not respond to quinin treatment.

Regarding the merits of giving quinin by mouth and hypodermically, I wish to relate an experience. I undertook a series of experiments for the purpose of determining by which method the parasites would disappear from the blood quicker, that is, quinin given hypodermically or by mouth, given either in

solution or in capsules. The chocolate-coated tablets and fresh capsules gave no different results from the solution. We got an abscess from the hypodermic injections of quinin in one case, that took three months to heal, and then we quit. There was no apparent benefit from the hypodermic method of administration of quinin. If a patient was unconscious it would be justifiable to give quinin hypodermically. We had some three or four such cases, and before the next chill came the quinin, which was given in solution, produced the desired effect, and they recovered.

Regarding the eye symptoms from quinin, I had one man who complained of dizziness and of not being able to see from taking quinin. We tried quinin in his case, reducing the dose to ten grains, withdrawing it at intervals, and keeping him on from ten to twenty grains every twenty-four hours until he recovered.

With reference to the remarks of Dr. Ochsner concerning the use of quinin in septic cases, unfortunately for us none of our cases was ever given quinin that did not show the malarial parasite. I have had no experience in giving quinin in cases of general sepsis. We make it a point to wait until the parasite is found in the blood before giving quinin, and that was one of the first surprises in our diagnosis. I told a neighboring friend of mine about this, and he agreed that he would not give quinin in his cases until he found the parasite, and thirty-four of them recovered without any quinin.

Regarding the differential blood count, there is an increase in the mononuclears. We did some work along that line, but did not think it worth while to carry it on any further as there was no direct good to come from it. The hardest organism to find was the quartan parasite. I want to say regarding the microscopic diagnosis in general, that it may vary from the easiest diagnosis with the microscope to the hardest one. One specimen may be taken during the chill, at which time nothing but the spores or fine segments will be seen in the blood, and a few days after the first or second chill, if the slide is dirty, you may look for twenty or thirty minutes and never find it. You should wait for another chill, but the organism can usually be found after the first chill, and more often after the second, and always after the third chill.

In regard to idiosyncrasy to quinin, I have had no cases that showed an idiosyncrasy to this agent. If I had, I would try eucalyptus oil, and give quinin in conjunction with acetanilid or rhubarb.

TABES AND THE SURGEON *

GEORGE W. HALL, M.D.

CHICAGO

Judging from the enormous number of articles and treatises in the literature relating to tabes, this is a subject as rock-ribbed and ancient as the hills. Yet the first accurate descriptions of this disease were given by Romberg in 1850 to 1857, Duchenne in 1858, and Wunderlich at about the same time. The minute anatomy and microscopical descriptions of tabes began with the investigations of Virchow in 1855 and Rokitansky in 1857, and Bourdon and Luys in 1861. The object of the paper this evening is not to present anything new whatever relative to tabes, but simply to go over the records of four or five cases which seem of special interest and which have been chosen from the records of one hundred cases which have been entered at the Cook County Hospital since July 1, 1909.

* Read before a meeting of the Chicago Medical Society, March 30, 1910.

F. R., aged 35 years, married. A cook by occupation. No children and the wife has had no miscarriages. Admitted to the hospital Sept. 3, 1909, complaining of pain in the stomach, which has troubled him at intervals for the past year, and lasting about four days each time, accompanied by vomiting, and both occur regardless of time of taking food. The pain radiates to the right side of the sternum and becomes easier after vomiting. Past history: He denies specific infection and uses liquor very moderately. His family history is negative. He states that he was operated on in May, 1909, for pyloric stenosis. The operation was performed on the fifth day of the pain and relief was obtained immediately after the operation. Finney's pyloroplasty was performed. In July, 1909, a second operation (a gastroenterostomy) was performed as it was thought that the first opening was not large enough. A record of an examination made of the patient in August, 1909, showed the pupils to be irregular and unequal, that the right eye responded sluggishly to light and promptly to accommodation, that the left eye showed the presence of an Argyll-Robertson pupil. The heart reveals the presence of a mitral systolic murmur. The abdomen is not rigid; the liver and spleen are not enlarged. A scar on the upper part of the abdomen at the site of the operation. Examination of the deep reflexes shows the absence of the knee-jerks as well as that of the tendo-Achillis. The sensory system shows the presence of analgesia below the knees and a band-like area of hypesthesia across the chest in the region of the nipples. A slight ataxia present when the eyes are closed. The bladder is distended and a scar is noted on the left tibia. Examination of the stomach contents shows free HCl 10; total acidity, 40; Weber's test negative. The multiplicity of symptoms in this case, together with the continuance of gastric disturbances rendered the diagnosis of tabes easy.

F. B., aged 27 years, entered the hospital Dec. 15, 1909, with a diagnosis of gastric ulcer. He complains of pains in the stomach associated with vomiting. This acute attack began four days ago. The pain is dull, gnawing and keeps him awake at night. It is increased by eating pork and decreased by eating eggs and soups. He cannot tolerate milk. The pain is not relieved by any position. It radiates all over the region of the stomach and is not localized to any one spot. The vomitus is brown and sour, both before and after meals. It has never contained visible fresh blood. He is always nauseated before vomiting. Analysis of the stomach contents shows free HCl 30; total acidity, 51. No blood is present. Past illness: The patient states his trouble began in January, 1909, when he was suddenly seized by pain in the region of the stomach, accompanied by vomiting. He was operated on in February, 1909, supposedly for some gall-bladder trouble. He was told that there was nothing wrong with the gall-bladder, but that he did have some trouble with the stomach. He continued to vomit for three weeks after the operation, when it suddenly ceased. A second attack occurred in April, 1909, and continued for one and a half weeks, and a third attack about the middle of May, 1909. In 1902 he gives a history of having had primary chancre. He was under treatment for two years. He is married and his wife has had three or four miscarriages and one healthy child. The use of alcoholics has been very moderate. Examination shows that the left pupil is larger than the right and neither reacts to light. On the chest are some copper-colored spots, both anterior and posterior. Examination of the heart shows a systolic murmur. A large scar is present over the region of the gall-bladder, no tenderness over the abdomen. He states that he has difficulty in starting the flow of urine and that there sometimes is a dribbling at night. The knee and tendo-Achillis jerks are present and normal. The sensory system shows the presence of hypesthesia in the region of the nipples. I think a Wassermann test was made by Dr. Ormsby in this case and was negative. But the presence of the Argyll-Robertson pupil, the bladder disturbances, the sensory disturbances and gastric pain makes the diagnosis plain in this case.

W. C., aged 33, entered the hospital Dec. 10, 1909. He complained of nausea and vomiting and a band of constriction about the hypogastrium. He first

noticed this band of constriction about July 22, 1909, five or six days following an operation, which had been performed in order to close a fistulous tract of the gall-bladder, following the result of an operation April 26, 1909, the purpose of which was unknown to the patient. Four years ago the patient began to be nauseated and had vomiting spells. These spells came on suddenly and were severe enough to require morphin. The first attack lasted two days. Six months later another attack lasted about one week and since then he has had attacks about every month, lasting from a few days to a week. The last attack occurred one month ago. Between the attacks the patient does not suffer much distress of the stomach. He has no bladder or rectal disturbances. His family history is negative. He is married and his wife has given birth to two healthy children: no miscarriages. Specific history fourteen years ago; continued treatment only one month. Examination of the pupils shows that they react to light and to accommodation. The left pupil is larger than the right and slightly irregular. No other ocular disturbance. The forehead shows a transverse wrinkling. Over the chest there is a band of hypesthesia, beginning at the nipple-line and extending downward a short distance; above this band the patient is somewhat hyperesthetic. At times shooting pains are present in the extremities, but there are no areas of sensory disturbances over the extremities, nor is ataxia present. The knee-jerks are active. This case does not present the well-marked symptoms of tabes, but the condition of the pupil, the band of hyperesthesia, the shooting pains, the presence of gastric disturbance, and the specific history I think are sufficient to establish the diagnosis.

M. B., married, aged 41 years, entered the hospital Jan. 26, 1910. He states that in 1907 he was taken suddenly ill with a very severe sharp pain in the epigastric region, which was preceded by nausea and vomiting. These symptoms continued for several hours when a physician was called and administered a hypodermic, which gave him relief. These attacks have recurred about every three to five days since that time. About two and a half years ago the patient was operated on for gall-stones, but no stones were found and the symptoms still continued. The physician continued the hypodermic treatment for a long time and then changed to the tincture of opium per rectum. For the last few weeks he has had dribbling of urine. He gives a history of primary luetic infection twelve years ago. His family history is negative. He is married, his wife has given birth to one child, who died at the age of 17 years. No miscarriages. Examination shows the pupils to be equal in size, the left somewhat irregular, reacts readily to accommodation and sluggishly to light. The right pupil is regular in outline, reacts sluggishly to light. Examination of the chest shows some slight involvement of the apex of the left lung. Examination of the abdomen shows a scar 6 to 7 c.c. long, extending vertically below the costal margin on the outer border of the right rectus muscle. Examination of the reflexes shows the tendo-Achillis and knee-jerks to be absent. Romberg symptom is present. Sensory system shows the pain sense to be impaired below the knees. So that the history of syphilis, the sluggish condition of the pupils, loss of knee-jerks, the presence of ataxia, bladder disturbances and analgesia over the lower extremities, together with a history of recurrent attacks of pain and vomiting, render the diagnosis of tabes very easy in this case.

This case has been added since the reading of my paper:

J. M., single, aged 50 years, occupation baker, entered the hospital Sept. 16, 1910, with the following complaint: Vomiting after eating immediately up to one-half hour, amounts to more than the amount eaten. The desire to vomit often persists after vomiting has occurred. Pain in the region of the stomach, dull in nature, at times sharp. It is relieved to some extent by vomiting, but not relieved by taking soda. The pain is of the character of a very large mass in the stomach.

Headache and dizziness; failing eye-sight, which he has noticed for the past three years. He has lost 40 pounds in weight within the last six or seven years. He complains of pain in both lower extremities, shooting in character, often cramp-like. He is able to walk about half a block, then he is compelled to rest a time before proceeding. The onset of the present trouble began six or seven

years ago with: first, pain in the region of the stomach, just below the xyphoid process, remaining localized as a rule, at times extending to the shoulders and down the legs. The pain is stabbing in character. Second, vomiting coming on suddenly after eating. He vomits large amounts, green in color and he has never noticed the presence of blood. These attacks of vomiting have disappeared for several weeks at a time and then recur suddenly. He has vomited often between meals without bringing up any food. He has been able to walk in the dark without experiencing any great difficulty. At times he has seen double and has had the sensation as though a tight band were drawn around the lower portion of his chest at times. He has also had the sensation of walking on a carpet or on feathers occasionally. A recent letter from the surgeon who did the latter operation states that he expected to find a carcinoma, but was disappointed.

Previous history: He does not know definitely that he has had a chancre, but did have a sore on the scrotum several years ago, followed by an eruption all over the body, especially noted on the chest and arms. Two years ago he was operated on for gall-stones and none were found. In May, 1910, he was operated on and a gastroenterostomy performed.

Examination shows a poorly nourished individual. He appears rather apathetic and unconcerned as to his condition. Inspection shows a decided transverse wrinkling of the forehead, the pupils react to light and accommodation. The left pupil reacts more sluggishly than the right, and is slightly irregular in outline. Mouth, teeth and pharynx are negative. The cervical and supra-clavicular glands are palpable. The lungs and heart are negative. A band of hypesthesia is present, on testing with the needle, in the region of the nipples. Inspection of the abdomen shows two linear scars in the epigastric region. No definite mass can be ascertained in the region of the stomach. The stomach tympany on distention with gas appears to be about three fingers breadth below the umbilicus. The upper border is in the normal position. Analysis of the stomach contents after a test meal showed absence of free HCl and a total acidity of 12. The inguinal glands are enlarged. The knee-jerks are absent. Fraenkel's sign is absent. Romberg's sign is absent. Ophthalmoscopic examination shows a partial atrophy of the right optic disc.

It has been noted that a sufficient number of symptoms have presented themselves in these cases on which a diagnosis of tabes can be made. It will also be observed that in order to make such a diagnosis it is not always necessary to have an Argyll-Robertson pupil, nor the loss of knee-jerk. In looking over the records of one hundred cases of tabes on the neuropathic service of the County Hospital I have made some tabulations as follows:

First, as to knee-jerks: Both knee-jerks were absent in 60 per cent. of the cases. One knee-jerk was absent in 3 per cent. The knee-jerks were sluggish in 3 per cent., they were present in 22 per cent. and exaggerated in 4 per cent.

The pupils. Argyll-Robertson pupils present in both eyes in 58 per cent. of the cases; Argyll-Robertson pupil in one eye in 7 per cent.; no response to light or accommodation in 1 per cent.; both eyes sluggish to light in 11 per cent. One eye sluggish to light in 4 per cent. Irregularity of pupil in 11 per cent. Inequality of pupil, 28 per cent. Ptosis in 8 per cent. Visceral crises in 10 per cent. Presence of pains in other parts of the body 51 per cent. Ataxia in 54 per cent. Bladder disturbance in 54 per cent. Sensory disturbances in other parts of the body, including hyperesthesia, analgesia and anesthesia in 58 per cent. A specific history was positively given in only 46 per cent. of the cases. The time between the primary infection and the onset of the trouble averaged twenty-two years; the age varied between twenty-one and

seventy-eight. The presence of arthropathies (Charcot's joint) 6.8 per cent. Presence of perforating ulcers, 7.2 per cent. In men, 93 per cent.; in women, 7 per cent. I have also looked over the records of 263 cases as recorded by Bramwell in the Edinburgh Royal Infirmary, in which his records differ somewhat in the following particulars: He records a loss of knee-jerk in 85 per cent. of his cases, as against the 58 per cent. which I have noted; and the presence of knee-jerks in 11.7 per cent. as against my 22 per cent. But he also notes ataxia present in 73 per cent. as against my 54 per cent., so that this difference may be explained upon the basis that his cases were farther advanced than were those which I have recorded. The presence of Argyll-Robertson pupil, or the sluggish pupil was found in his cases to be 73 per cent., which coincides with my reports of 75 per cent.

I only quote these statistics in order to bring out the point that we do not always have present the four or five important symptoms of tabes before a diagnosis can be made, but the mistakes which are so frequently made both by the internist and the surgeon are due not so much to the difficulties of the problem as to too hasty and superficial examination. I believe it is the feeling of every medical man or surgeon of experience that he falls down, so to speak, upon a diagnosis because he does not look for the disease which is present. If one would only keep in mind the important symptoms and signs of tabes and when one of these symptoms is present, make systematic examination with reference to the presence of tabes, a failure to recognize its presence would seldom occur. If a patient comes to the hospital complaining of bladder disturbance or pains in the stomach, or a sore on the dorsal portion of the foot, one should consider the possibility of tabes. Likewise, in severe trigeminal neuralgias, pains in the region of the joints or elsewhere, arthropathies, fractures without sufficient cause, complaints of disturbances of sensation in different portions of the body, should cause one to consider the presence of tabes. It does not take long to make an accurate test of the pupils, to observe their size, contour, inequality, and reaction to artificial light, to test the deep reflexes, to inquire into the presence of lancinating pains, vesical disturbances, failure of vision, diplopia, and difficulty in gait. By such interrogation and examination such combinations of symptoms would present themselves as to exclude any doubt as to the presence of tabes.

One could mention many combinations, if time permitted, upon which such a diagnosis could be based, but I merely wish to emphasize a few points in this connection.

1. That while typical gastric crises are usually sudden in onset, accompanied by vomiting, and after a duration of hours, days or weeks, let up suddenly, on the other hand the onset may be gradual, and it may recede gradually. It may be brought on by errors in diet, and may be accompanied by hematemesis.

2. That the Argyll-Robertson pupil is not always present, that it may be present during the crises, and absent during the intervals.

3. That the knee-jerks may be present or even exaggerated, in a very well developed case of tabes.

4. That the absence of a specific history should not too much influence our diagnosis, although Erb, in his reports of 1,100 cases, states that there was a positive history in about 90 per cent. of the cases.

5. That the Wassermann test should be made in suspicious cases.

6. Cyto diagnosis of the spinal fluid to ascertain the presence or absence of a lymphocytosis, also a test for presence or absence of increased amount of globulin.

The cases which I have reported to-night refer especially to the presence of abdominal pain, and I have dared to make these reports not with any spirit of criticism of the surgeon, but simply to bring the question before the society for discussion, for I cannot state whether the surgeons who operate on such cases are aware of the presence of tabes or not. One thing can be stated, and that is that these cases so often present such perplexing problems as to require great care and consideration by the surgeon. Granted that the presence of tabes has been detected in such cases, the question must naturally arise in the mind of the diagnostician as to whether or not that patient is suffering from an independent trouble, such as gall-stones, gastric ulcer, intestinal obstruction, epigastric hernia, strangulated hernia, prostatic trouble, osteomyelitis, dislocated hip, or other diseases of the joints. As I have stated before, the object of this paper is not to instruct nor to make a diagnosis of these surgical problems, but to place stress on the importance of not operating unless one is convinced of the presence of a complicating disease. I cannot emphasize that point better than by referring to the article of Stuart MacGuire¹ on "Latent and Active Neurasthenia in Its Relation to Surgery," in which he states: "A surgeon cannot be expected to be an expert neurologist; but for his own happiness, if not for his patient's welfare, he should study his cases, learn to know his limitations as well as to recognize his ability, and to estimate the possible injurious effect as well as the probable beneficial results to be expected from surgical intervention. He must remember that the patient does not come to him primarily to be cut, but to be cured, and that an operation is not a success unless the individual is restored to health, not only anatomically, but symptomatically." I might also add that with such care exercised by the surgeon as well as the medical man in diagnosis, the patient will not leave the hospital with scars on his abdomen, which, when interpreted by time and the recurrence of attacks of pain and vomiting will read "Opened by mistake."

I desire to express my thanks to my associates on the medical staff of the Cook County Hospital for the privilege of reporting those cases which I report from their service, and to the interns for assistance in the examinations.

DISCUSSION

DR. FREDERICK TICE: Clinical experience has taught us that tabes is quite often mistaken for some other condition and surgical interference is by no means infrequent. It can hardly be said that this is due to lack of ability where the diagnosis is easy and overlooked.

1. Jour. A. M. A. March 26, 1910, x, 19.

To the cases reported by Dr. Hall, many of which, if not all, I have had the opportunity to examine, I would also add two:

The first one, a man of middle age, was sent out to the County Institution, where he was in my service. He complained of gastric pains with vomiting and loss of weight. Some months before he was operated on for gastric carcinoma. The name of the surgeon will not be mentioned, as it might cause some embarrassment. He gave a specific history and presented the finding of a tabes.

The second case was observed in Professor Kovác's service in Vienna. The patient was a young man and had just recently been operated on by Professor Gussenbauer on the diagnosis of appendicitis. There was a specific history and findings of a tabes.

Dr. Hall is to be congratulated for calling attention to this not infrequent accident.

Dr. A. D. Bevan:—One of the subjects which the surgeon must be thoroughly familiar with in clinical work is that of syphilis. Some of the most brilliant diagnoses are made by the surgeon who is on the lookout for syphilis and the syphilitic element in every case that comes to him. On the other hand, some of the most serious mistakes are made if this element is overlooked.

Tabes is to-day accepted as one of the sequelæ of general constitutional syphilis. In the perfectly typical advanced picture it is easily recognized, the diagnosis being clear even to the laity, but in the early history of the case, and in atypical cases, the diagnosis may be exceedingly difficult. I have been called upon repeatedly to operate for appendicitis, for gastric ulcer, for gall-stones, for prostatic hypertrophy, for pyuria of obscure origin, where on careful analysis, the condition present was atypical, or beginning tabes with gastric or abdominal crises, or partial paralysis of the bladder with slight infection. Not long ago, a neurologist sent me a patient to operate on for ulcer of the stomach. He had recommended a gastroenterostomy, and was very familiar with tabes, and yet in this particular case he had overlooked the real condition, which was tabes with gastric crises. I have seen many of the tabetics who have been operated upon, have had operations performed on their stomach, appendix removed, gall-bladder drained, without, of course, any improvement.

Another side of the picture, however, which should be remembered is, that a tabetic can have an attack of appendicitis just as anyone else, or can have gall-stones, or can have an acute gastric ulcer which may need an operation, and I have personally operated on several tabetics with acute inflammation of the appendix and with gall-stone disease.

A third condition which should be discussed here is the surgical treatment for these tabetics for the relief of the pain from these gastric crises. Recently, Foerster has recommended the resection of the posterior sensory roots of two, three or more of the dorsal nerves supplying the abdominal wall and contents. As a rule the fifth, sixth and seventh roots have been resected, and very fair results have been obtained in the way of the relief of the pain which is sometimes agonizing in these cases. The mortality of this operation is considerable. As yet but a limited number of cases have been operated upon, and not enough to enable us to draw any definite conclusions. As yet the operation has but a very limited field in cases which are in good general condition, but where the gastric crises are very severe and make the life of the individual hardly worth while.

In conclusion, I would say this: that we must be always on the lookout for these beginning and obscure cases of tabes; that we must be on guard against operating for gastric crises simulating other acute abdominal conditions. We must, however, be alive to the possibility of the occurrence of the acute abdominal emergencies demanding operations in tabetics. And lastly, the surgical treatment of tabes for the relief of these gastric crises is as yet an obscure field which has been but little explored, and the operation of resecting the sensory roots for the relief of this condition should be done only on extreme cases which seem peculiarly to warrant such drastic measures.

REPORT OF THE CAMPAIGN AGAINST SUMMER DIARRHEA,
CHICAGO, 1909, UNDER THE AUSPICES OF THE DEPART-
MENT OF HEALTH AND THE UNITED CHARITIES.

CAROLINE HEDGER, M.D., DIRECTOR.
CHICAGO.

For many years in Chicago no large organized effort for the control of diarrhea has been undertaken. We calmly accepted the annual harvest of death as if it were as inevitable as the weather, as if indeed a part of the weather. Hot weather, babies die—was our unconscious thought. Gradually there arose the feeling that we could not afford this loss of life; that the sickness that produced this large number of deaths had other results of ill omen to the future citizen; that the disease, undoubtedly epidemic, had also social causes; that the disease could and must be prevented.

For some years the United Charities, then two organizations, made efforts to better the condition of babies: 1, to get mothers and babies out of the city; 2, to start centers in the city itself for the care of those sick and for the education of mothers at baby tents. The Children's Hospital Society, through a committee, established a milk commission to provide modified and pasteurized milk for babies at a reasonable price. No doubt these activities saved lives, but they were insufficient to cope with the problem; the death rate did not decrease.

In 1908, the Health Department put 100 doctors into the field in July and August for house to house visiting and instruction to mothers. Their work only served to demonstrate the magnitude of the task and to show that we had not yet found the way to do efficient work. Unfortunately the records of the work were destroyed before any study had been made that would clearly show the points for attack in a future campaign.

In 1909, the United Charities, the Health Department, and Visiting Nurses Association engaged in the work jointly. The Health Department from its statistics mapped out the areas of the highest death rate for previous years and furnished twenty nurses and fourteen doctors, spending \$10,000 on the campaign. The details of their work will be given in another report. The United Charities furnished nurses, tents, interpreters and social workers. Their work in the main being made possible by the McCormick Memorial fund, over \$5,500 being used. The Visiting Nurses' Association supervised tents, furnished nurses in the tents, and worked in the field. The general plan was house to house canvass by nurses in the most crowded and insanitary districts, where the previous years the most deaths had occurred. Wherever small children were found, instruction in feeding and general care was given. In the beginning, it was arranged that the Health Department nurses should act as finding agencies, turning the actual care of the sick babies over

TABLE 1.—TABLE OF SUMMARIES.

523,556	41,021	2,892	17,196	45,247	87,050	697	13,498	3,258	93,116	29,733	7,933	1,035	18,849	70,280	42,816	58,037	20,863	79,845	12,615	5,386	7,408	.....	4,218	52,052	33,729	6,788		
Population by nationalities.....																													
Note preponderance of Slavic people.																													
September.....	139	2	3	7	27	1	.....	44	106	6	.....	.....	4	4	3	4	.....	25	21	.....	.....	1	31	.....	51	42	709
August.....	126	6	3	6	42	1	.....	3	210	10	1	2	13	5	3	.....	39	56	.....	.....	4	2	5	.....	.....	.....	709
Total number deaths diarrheic.....	23	.....	1	8	.....	.....	.....	.....	6	213	41	.....	7	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	401
Milk not kept cool.....	25	.....	8	3	13	1	.....	1	21	74	26	.....	1	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	437
Milk kept cool.....	10	.....	.....	.....	.....	.....	.....	.....	6	70	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	248
Water not given.....	54	1	6	18	59	2	.....	1	12	335	61	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	1,018
Total number cases diarrheic.....	19	.....	5	18	.....	.....	.....	.....	1	61	10	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	308
No milk.....	4	.....	.....	.....	.....	.....	.....	.....	18	5	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	293
Patent food.....	4	.....	.....	.....	.....	.....	.....	.....	4	154	22	1	1	1	1	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	308
Low +.....	14	.....	3	20	.....	.....	.....	.....	4	41	17	.....	5	5	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	318
Low.....	27	.....	1	6	14	.....	.....	.....	20	59	23	.....	5	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	318
Commission.....	11	.....	1	1	1	.....	.....	.....	22	9	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	365
Breast +.....	19	.....	4	9	15	1	.....	.....	3	132	13	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	410
Breast.....	9	.....	.....	.....	.....	.....	.....	.....	2	171	25	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	365
Total number cases diarrheic by food.....	58	.....	2	8	14	54	.....	.....	18	394	55	1	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	1,131
Recovered.....	10	.....	.....	.....	.....	.....	.....	.....	9	33	17	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	122
Deaths.....	40	.....	1	10	43	1	.....	.....	5	164	32	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	692
Days.....	40	.....	1	2	11	33	1	.....	2	5	164	32	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	751
Weeks.....	40	.....	1	.....	.....	.....	.....	.....	8	313	66	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	692
Total number cases diarrheic by termination.....	58	.....	2	8	14	54	.....	.....	18	394	55	1	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	751
when first seen.																													
September.....	6	.....	2	4	1	.....	.....	.....	1	31	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	94
August.....	51	.....	4	18	14	1	.....	.....	7	358	19	.....	1	10	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	879
July.....	38	.....	2	9	9	1	.....	.....	6	208	46	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	196
June.....	12	.....	1	3	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	7
May.....	1	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....
Total number cases diarrheic by onset.....	30	.....	9	14	2	.....	.....	.....	122	63	1	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	424
Severe.....	45	.....	3	14	2	.....	.....	.....	11	502	63	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	1,079
Medium.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....
Total number cases diarrheic by type.....	12	.....	3	2	.....	.....	.....	.....	1	62	19	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	752
Over 2 years.....	39	.....	1	6	39	.....	.....	.....	1	265	50	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	670
1 year to 2 years.....	24	.....	2	4	20	1	.....	.....	1	233	54	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	670
6 months to 1 year.....	29	.....	6	8	19	2	.....	.....	12	199	30	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	445
Under 6 months.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....
Total number cases diarrheic by a ges.....	17	6	3	4	8	10	5	7	10	1	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....
Per 1,000 cases.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....
Per 500-1,000 cases.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....
Per 100-500 cases.....	4	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....
Total number families visited.....	312	10	4	32	174	513	27	250	80	1	91	5,325	676	5	28	195	61	74	12	792	1,927	5	57	1,119	26	935	453	65	14,580
No sickness.....	109	3	11	27	91	3	47	15	2	34	723	127	1	1	14	9	4	3	69	225	3	222	10	243	27	4	2,057
Diarrhea.....	37	2	13	13	25	1	20	2	2	1	234	39	890
Other diseases.....
No. wards in which well families were visited.....
Per 1,000 + cases.....
Per 500-1,000 cases.....
Per 100-500 cases.....
Per 1,000 cases.....
Total number cases diarrheic by a ges.....
Under 6 months.....
6 months to 1 year.....
1 year to 2 years.....
Over 2 years.....
Total number cases diarrheic by type.....
Medium.....
Severe.....
Total number cases diarrheic by onset.....
May.....
June.....
July.....
August.....
September.....
Total number cases diarrheic by duration when first seen.....
Days.....
Weeks.....
Total number cases diarrheic by termination.....	.....	.....	.....																							

to the Visiting Nurses' Association, or the nurses of the settlements in the districts or to the nurses of the United Charities who were traveling out from the stations of the Milk Commission.

The last week in July the epidemic began with such violence that the three last mentioned classes were overwhelmed. They simply could not cover the cases found for them, so the work was readjusted; the Visiting Nurse or the local and Milk Commission nurses took as many sick as they could care for and the rest were cared for by the Health Department nurses in addition to their house to house visiting and finding. Through this readjustment and in especially bad areas, such as the Sixteenth and Seventeenth wards, some overlapping occurred. This was due to an effort to cover the ground and if possible save some babies. It was demonstrated that the last plan was the better plan, that one nurse on a case was more effective as a rule than two. The nurses made a great effort to prevent friction with the medical profession and in one case only were there repeated reports of any such friction.

The appended sheet of instructions to nurses, Appendix 1, will show the methods employed:

1. What was done? 2. What was found? 3. What was accomplished?
4. What should be done next?

I. Work of nurses (See Table 1): Considerably over 25,000 calls were made in eight weeks; 17,437 families were reported on cards more or less perfectly filled out; 2,857 sick children were dealt with, 2,057 being cases of diarrhea, 800 other diseases.

Cases found in the house to house visiting were handled as well as was possible. Some families were refractory, would not improve feeding methods, wished no interference. This attitude was expressed in words by one Lithuanian family. The father shrugged his shoulders saying, "O the baby die, the Lord send another one." This was found in a comparatively small number of cases. More difficulty was found in getting the desperately sick ones to hospitals and sanitariums. The foreign mother is timid and afraid to leave home and more afraid to let the baby go. By far the larger number of mothers are anxious to do right but are ignorant and unable to do the best by their babies.

Late in the summer, the nurses wrote a paper on the appended questions (Appendix 2), a small prize being offered. One of the most striking papers received is appended (Appendix 3). The nurses as a whole had insufficient training in the making of cards and in the placing of cases. Picnics were given for mothers and babies in parks and audiences for lectures were worked up by the nurses. The spirit of the corps was fine and in another year more effective work could be done.

By the baby tents: The baby tents in July, August and September cared for 1,330 patients, and the visits made in connection with the baby tent work totaled 3,583. With the shifting population in the field work, the final result cannot be given; the figures however are extremely good: 26 per cent. died; 19 per cent. recovered; 10 per cent. improved.

TABLE 2.—DISTRIBUTION OF THE CASES AMONG DIFFERENT NATIONALITIES AS REPORTED AT BABY TENTS.

Nationalities.	No. of Cases.
Polish	445
American	338
Jewish	95
German	28
Bohemian	59
Hungarian	11
Russian	28
Lithuanian	67
Slovak	9
French	4
Irish	4
Spanish	1
English	1
Belgian	1
Italian	1
Roumanian	7
Swedish	2
Greek	1
The number of diarrheal diseases:	
Enteritis	318
Gastro-enteritis	115
Diarrhea	107
Cholera infantum	1
Dysentery	1

This classification on anatomic grounds is hardly a defensible one. These cases were all manifestations of one of the two processes: a toxic process, or an infection in the intestinal tract. This shows the need of further work along bacteriologic lines, that we may dwell upon the etiologic rather than the pathologic aspect of the disease.

Early in the spring Mrs. Henrotin devised, financed and superintended an exhibit on the care of babies, that traveled about the city. The work was in charge of Miss Jaffek who speaks the Slavic languages. This is an educational measure of undoubted value, as it shows inexpensive and practical appliances while teaching baby hygiene.

Work done in this exhibit: Total number lectures given, 30; settlements visited, 14; mothers attending, 484; girls, 545; boys, 10; babies, 206; total attending, 1,245.

Summer diarrhea of infants involves two separate problems:

1. The bacteriologic: It will be seen even from the incomplete bibliography at the end of this report the immense amount of work being done in this line. Nor is this view of the disease a hopeless one, as one by one the infectious diseases yield to serum or vaccine treatment, we may reasonably hope for such an advance that the summer diarrhea of babies can be handled in this manner.

2. The social problem: The individual will welcome any minimizing or curative treatment of the disease but society demands the eradication of those causes constantly acting which produce the disease. Nor is this an impossible aim. The reduction of typhoid in Chicago by

improved water supply is a suggestion of the possibility of society protecting itself from fatal bacterial invasion. Summer diarrhea is, however, an immeasurably larger problem than typhoid and more factors enter into it. In this report some of these factors will be considered and an attempt will be made to outline possible social action that will in the near future reduce the appalling mortality, and far more the threatening morbidity of summer diarrhea.

TABLE 3.—TABLE GIVING FOOD OF 2,057 INFANTS SICK WITH DIARRHEA

Breast fed	365
Breast and other foods	410
Condensed milk	76
Commission milk	348
Cow's milk	165
Cow's milk and other food	368
Patent food	35
No milk	203

The first problem that presents itself is the food of the baby. (Tables 3 and 4). This study would on the face of it show that milk alone was considerably safer than milk with other foods for infants; that cow's milk was fed in slightly more cases than breastmilk of those sick. This is emphasized by taking into consideration the nationality of the mothers and the fact that the foreign women are more able or more willing to nurse their babies; that they are unable to pay for artificial food if at all able to produce breastmilk. We are dealing in the main with foreign mothers, only 109 of the cases coming under the head American. A study of 7,962 cards by Dr. McMahon shows the following:

TABLE 4.—FOOD OF ALL CHILDREN SICK AND WELL

	Mother's Milk.	Cow's Milk.
Children well	2,759	3,363
Children sick	701	1,139
Total	3,460	4,502
Grand total		7,962

This large number of breast fed infants is not in accord with Margaret Shutts¹ figures. In fact this number of breast fed exceeds any I have been able to find in the literature, with the exception of Kerley, who reported 24.5 per cent breast fed.

Other cases are recorded as follows:

Hope,² 3 per cent. of 1,000 fatal cases breast fed.

Meniert,³ 3.9 per cent. of 643 fatal cases breast fed.

Buller, 16.9 per cent. of his series breast fed.

Chicago, 17 per cent. of 2,057 sick cases entirely breast fed.

Chicago, 38 per cent. of 2,057 sick received breast milk.

Chicago, 23 per cent. of 7,962 sick and well received breast milk.

1. Shutts, Margaret; Journal American Medical Association, Aug. 2, 1902, 245.

2. Hope; Contagion; Liverpool Med.-Chir. Jour., July, 1885, January, 1887.

3. Meniert; Deutsch. Med. Wehnschr., June 14, 1888; Mortality by Food and Location in House.

Chart I

Chart showing comparison between death rate, Well Kept

——— Total number receiving breast milk. Milk and Feeding
 ——— Total number receiving cow's milk.
 Milk kept cool.

..... milk kept cool.

[illegible]

The point to be emphasized in this summer campaign work is the large percentage of those receiving other food with breast milk. No data is given as to whether this was a necessity or as to the nature of the food given. It was a matter of observation, however, that often the most deleterious and indigestible food was given to babies. In addition it was observed that bad habits of nursing in strictly breast fed babies were prevalent. Doubtless these two factors combine to produce a condition of affairs in which nearly as many sick babies are found on breast milk as on artificial food. And the menace of the situation is well shown in the fact that only 23 per cent. of both sick and well are breast fed.

TABLE 5.—TOTAL NUMBER CASES DIARRHEA IN RELATION TO BREAST FEEDING BY NATIONALITIES

	No. Cases Diarrhea.	Breast Fed.	
		No.	%
American	109	9	8
Belgian	3	0	0
Dutch	11	0	0
Austrian	27	2	9
Bohemian	91	16	17
Croatian	3	0	0
Slovak	47	12	26
Hungarian	15	0	0
Roumanian	32	3	9
Polish	723	152	21
Lithuanian	127	13	10
Finnish	1	0	0
Danish	1	0	0
Swedish	14	2	13
Norwegian	9	2	25
English	4	2	50
Scotch	3	0	0
Irish	69	16	23
German	225	36	16
French	3	1	33
Jewish	263	53	23
Greek	10	0	0
Italian	243	34	14
Negro	27	7	26
Arabian	1	0	0
Armenian	3	0	0
Not stated	31	0	0
Russian	34	3	9

This table confirms Tables 3 and 4 in this report, showing the high number of diarrhea cases in those nationalities that have a high percentage of breast feeding, notably Jewish, Irish, Polish and Slovaks.

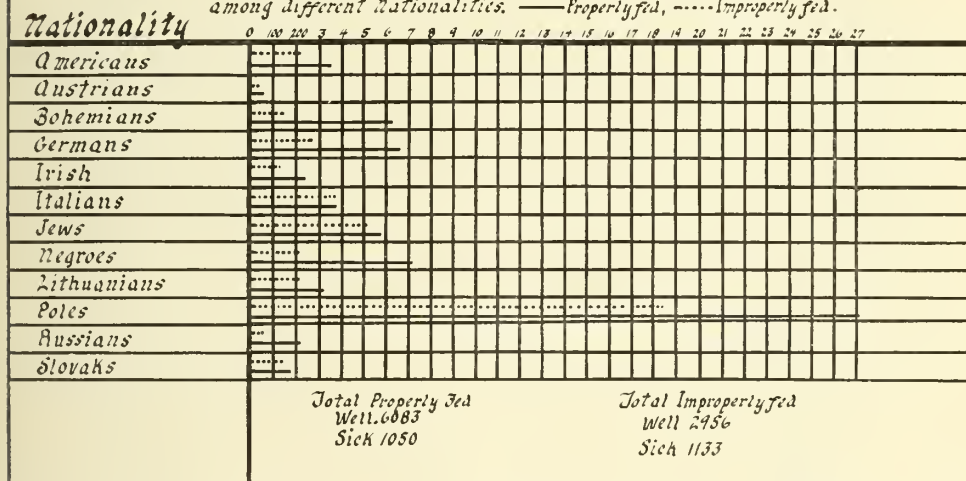
In considering the subject of mortality in relation to feeding we must consider the keeping of milk. The records on this point are incomplete but in every instance the number of babies fed well-kept milk falls considerably below the number of babies fed poorly-kept milk. A large proportion of the milk is badly kept. In one ward only, the Twen-

ty-ninth, (Chart 1) (the Stock Yards), would it appear that the small number of cases in which milk was kept cool might have a relationship to the high death rate; in the other wards the small numbers follow too closely the amount of milk used to draw any deduction. In ward 29, however, the absence of ice or ice boxes is so general that it might well influence the morbidity rate, hardly the mortality rate, as the Seventeenth ward with apparently equal amounts of milk well and poorly kept has higher death rate and smaller number of cases.

A study of Chart 2 by Dr. McMahon will show that the factors of proper and improper feeding must be taken into consideration. The most striking fact in Chart 2 is the advantage apparent to the Bohemians in comparison with the Germans. In relation to well and properly fed they have few sick and fewer improperly fed. The Italians

Chart 2

Comparison between properly and improperly fed Infants among different Nationalities. — Properly fed, ---- Improperly fed.



have the greatest proportion of improperly fed, and the Jews give a close second. Lithuanians and Slovaks, though in smaller numbers, come next on the list in the proportion of improperly fed.

Newsholm in his article on "Domestic Infection and Summer Diarrhea," states that good milk containing only 30,000 bacteria to the c.c. may contain 25 billion after 24 hours at 35° C. The Milk Commission milk, with which an effort is made toward careful handling, is much of it fifty hours old when it is consumed and passes through four hands with much transportation on rail and wagon. Probably the cow's milk where no especial effort is made is nearly as old and worse contaminated. The Health Department last summer examined numbers of samples of milk in the neighborhoods where the diarrheal diseases were most prevalent. During the height of the epidemic the last days in July, some samples taken showed every commercial milk examined to contain more

than 100,000 bacteria per c.c. and it is only a decent requirement. Really clean milk should not have over 30,000 bacteria. Of course the bacterial content of milk depends on:

1. Original cleanliness in handling the milk, or the number of germs originally present in the milk.

2. Length of time between cow and consumer, that is, the time the bacteria have to multiply.

3. Temperature at which milk is kept, moderately high temperature, above 40 degrees F., being favorable for the growth of this form of plant life.

4. Subsequent infection of milk in the houses.

The Health Department struggles with the first requirement, demanding cleanliness in the dairies and pasteurization. As an emergency measure until clean milk can be produced in sufficient quantity pasteurization must be urged. Its advantages and disadvantages are too well known to need repetition.

No systematic effort has yet been made to shorten the time between the cow and the baby. The experience of Buenos Ayres should encourage great effort to supply the necessarily bottle fed babies with milk less than eighteen hours old. The Milk Commission and the *Tribune* ice fund are efforts in the direction of keeping the milk cool. Such efforts and the providing of cheap ice boxes should be encouraged. The care of milk in the house is a hygienic and educational work of great magnitude and must be attacked by all interested.

The type of the disease this summer was severe.

TABLE 6

Mild	1,079
Severe	424 or 39%
Unknown	554

TABLE 7.—SHOWING NUMBER OF CASES BEGINNING EACH MONTH

May	61
June	196
July	552
August	94
September	94

The chronic nature of the disease is well shown by the statement that 602 cases had been sick several days when the patient was first seen, and 797 cases had been sick several weeks.

An effort was made the last week in which the nurses worked to find and report on every case that had been cared for during the summer. This was impossible; many had moved and I know of no experience that has given such a vivid impression of a shifting population as this very campaign. The rapidity of the shifting may be judged by two or three illustrations. The Health Department gave out during the month of August, 300 births recorded as occurring in the Twenty-ninth Ward

within twelve months. One-half of these after hunting were found. Dean Sumner, early in the year sent out social workers in his district and located, as he supposed, every baby that would need care during the summer. When eight or ten weeks later a Health Department nurse went over the same ground nearly one-third were missing. Our inability to find babies that had been under the care of the nurses at the end of the season illustrated the same tendency. Of those found 122 had died; 1,131 had recovered, making a death rate of 10 per cent. This result gains added weight when one takes into account the facts of the families living in tenements, the large proportion of foreign mothers and the home care.

Another factor that enters into the feeding of the foreign child, in addition to the beer, coffee, sausage, saurkraut, that brings him to his untimely end is the absence of water; 243 babies among those sick were found who received no water.

The matter of the mother working away from home was a factor of little consequence in this particular epidemic. Only 107 mothers are reported as working outside the home.

Niven⁴ and Glover⁵ both wrote concerning the large part played in epidemic summer diarrhea by flies. The presence of flies was one point on the card, but was imperfectly filled out. Certain it is that the Twenty-ninth Ward, from the proximity of the dump (where the sheet of humming flies fairly carpets the ground) and the Stock-Yards is the liberally supplied ward, and its death rate corresponds. Not enough comes out in this study to speak positively of other wards, but the whole fly situation is one of the most striking brought out by Dr. McMahon's study (Table 8). The figures represent the number of families in which flies were reported. For every family in the "Well" column where flies were reported, seven families were either reported as having none or unknown; i. e., only 13 per cent. were known to have flies; while amongst the sick 74 per cent. are reported having flies.

TABLE 8.—NUMBER OF FAMILIES IN WHICH FLIES WERE REPORTED:

	Well.	Diarrhea.
American	77	45
Australian	18	18
Bohemian	89	77
German	97	78
Irish	68	29
Italian	154	118
Jewish	59	142
Negro	101	23
Lithuanian	140	66
Polish	260	477
Russian	30	11
Slovak	23	26

4. Niven: Rep. of Health of Manchester, 1903, 166; *ibid.*, 1904, 210.

5. Glover: Epidemic Summer Diarrhea; Relations to Flies, *Lancet*, 1908, ii, 715.

Thirteen per cent. well families reported flies. Seventy-four per cent. sick families reported flies.

TABLE 9.—DEATHS FROM DIARRHEA IN LAST TEN YEARS.—DR. McMAHON

	Sick.	Well.
American	4	27
Austrian	22	7
Bohemian	12	16
German	25	41
Irish	3	33
Italian	9	25
Jewish	21	63
Negro	2	0
Lithuanian	13	19
Polish	136	240
Russian	1	11
Slovak	7	7
Other nationalities	5	0
Total	240	489

Proportionately, three times as many babies died in the 1,537 families who were this summer having diarrhea as in the 8,535 families who this summer had no diarrhea, showing that the cause of summer diarrhea lasts in the given family over a series of years.

TABLE 10.—THE RELATION OF DIARRHEA TO OTHER DISEASES.—DR. McMAHON

	Diarrhea.	Infections.	Nutritional.	Other Diseases.
American	63	14	14	10
Austrian	21	2	4	1
Bohemian	74	4	5	14
German	180	13	20	21
Irish	40	11	7	8
Italian	161	26	47	21
Jewish	184	19	20	54
Negro	29	...	9	...
Lithuanian	114	21	3	1
Polish	578	78	44	65
Russian	20	2	3	3
Slovak	47	12	3	...
Other nationalities ...	73	7	8	7

This shows, of course, the great preponderance of diarrheal sickness over other diseases in July, August, and September.

The 2,057 cases of diarrheal diseases reported in this paper ran by ages, as follows:

Table 11.

Less than six months	445, 21 per cent.
7 months to 1 year	670, 32 per cent.
1 year to 2 years	672, 32 per cent.
Over 2 years	107, 5 per cent.
Unknown	163, 10 per cent.

We seem to have about the average number under two years with a tendency to have more under six months than published series. These are additional facts that point toward bad nursing habits, addition of other food, as well as the bad keeping of milk.

Crandall⁶ reports 135 cases: Under 2 years, 85.9 per cent; 6 months to 18 months, 51 per cent.

Holt reports 772 cases: Under 2 years, 81.6 per cent; under 6 months, 15 per cent.

Table 12 gives the result of a study of 10,951 families on the basis of sanitation. The striking features of this table is that five times as many well as sick have good sanitation.

TABLE 12.—TABLE GIVING SANITATION OF 10,951 FAMILIES.—DR. McMAHON.

	Good Sanitation.	Fair Sanitation.	Poor Sanitation.
Sick	470 or 4%	442 or 4%	422 or 4%
Well	2,282 or 20%	1,191 or 10%	964 or 8%

Table 14 gives 1,500 cases studied on the basis of age, diarrhea and feeding.

What Was Accomplished:—614 babies saved from all causes, on the year's account; very little actual diminution of the diarrhea deaths. This takes into account no increase in population, nor does it take into account the high humidity and slightly increased heat of the summer. We believe we saved about 10 per cent.

Of vastly more import, I believe, than the actual number of lives saved, is the immense educational work done by the nurses and doctors, for as Newman⁷ well points out, it is, in the last analysis, the mother who must save the baby. There are among the Poles, where the morbidity was the highest, clean little three-room flats in tenements, where the babies were well kept and healthy, though surrounded by dirt and numerous cases of diarrhea. Our harvest may be greater this coming summer than it was last, for there are signs that there is a real awakening of interest in the question. It has been observed that the value of barley water and castor oil are topics of conversation at Polish gatherings.

What Should be Done:—First, the campaign should be a year-long affair. A few weeks of instruction in the summer is not sufficient. It must be line upon line and precept upon precept, year in and year out. To do this we must know where the babies are. Legislation must be procured that will enable the Health Department to get full and accurate birth returns promptly. At present, about one-third of the births are reported with aggravating slowness to the County Clerk, who has no concern with health matters. While this legislation is being pushed, other schemes must be devised to find babies. This house-to-house canvass is expensive; 18,000 families were visited to find 2,857

6. Crandall: Am. Ped. Soc., 1890, 115.

7. Newman: Infant Mortality.

sick; but this does not, of course, mean total loss on the other 16,000, as we were waging an educational campaign as well as a baby saving one. The preventive or educational campaign is the important one. The death rate on our reported cases is high, e. g., 10 per cent. The disease tends to be chronic, and to injure the organism for a long time, therefore the babies must be found soon after birth, and the mothers taught.

There are three possibilities that I can see on the baby finding problem:

1. Begin a popular movement for baby citizenship. Give a card printed in colors and having a legal weight as a certificate of citizenship to every baby voluntarily reported within one month of birth. As a bait to get the babies in, affix to the card the picture of the baby. Many foreign people cannot afford pictures, and will go to considerable sacrifice to procure one. Make this card good for school entrance, work certificate, or the right to vote. In event of return to a foreign country, it could be used as a protection against army service.

2. Institute a return postal system of reporting births to the Health Department by doctors. As the law now stands, they are to be paid 25 cents for every birth reported, but no appropriation is voted to make this law a working possibility. This law should be repealed but in the meantime return postals with educational work in the medical societies will bring in some babies.

3. Interest, and secure the cooperation of the great industrial life insurance companies. These have already been approached and have signified their willingness to help, but it remains to devise the best plan to utilize their findings.

As a further step for the future educational work, the feeding and care of infants must be systematically and persistently taught in the grades of public schools. Too many foreign children fail to reach high school to intrust their teaching to any place but the grades. The baby tents are a valuable addition to both the educational department and the baby saving side of the work. Their educational department should be developed.

The Milk Commission should approach the problem on the educational side. As is pointed out by Mr. Phillips, of New York, the amount of milk sold for babies by a milk commission is a measure of its inefficiency. The milk should go to the mother, that she may nurse her baby and she should be taught at the milk commission station how to nurse her baby and how to make the best of herself and her baby.

The further cooperation of the clergy, so helpful last summer, should be secured; an effort made especially along the line of foreign speaking priests. Dr. Evans believes that each nationality must help itself, and as the Poles are largely church people, much can be hoped for from this source.

The need for a body of socially trained nurses is apparent. The handling of cards and the placing of cases is no part of the regular training of a nurse. The school of Civics and Philanthropy has been approached, and a post-graduate course along these lines for nurses is

one of the possibilities of the future. Endowment of a fellowship for the bacterial study of the disease should be encouraged. This would include not only the determining the actual number of cases in which the Shiga bacillus is present, but methods of infection and the relation of flies, contaminated milk and food, or the contagion from other sources and the study of the other organisms involved.

The findings in the relation of milk to summer diarrhea are hardly more clear than those in the relation of sanitation, but the striking relation between flies and this sickness demand our most careful thought.

TABLE 14.—TABLE OF 1,500 CASES ON THE BASIS OF AGE, DIARRHEA, AND FEEDING.—DR. McMAHON.

Food and Age.	Good Sanitation.	Fair Sanitation.	Poor Sanitation.	Not given.
Breast milk, under 1 year	140	55	27	101
Breast milk, over 1 year.	19	9	16	28
Breast milk and other food,				
under 1 year.....	21	55	32	83
1 to 2 years.....	27	47	28	109
Over 2 years.....	6	3	1	1
Unknown .....	...	5	...	2
Cow's milk under 1 year.	42	39	50	52
Cow's milk, 1 to 2 years.	13	25	12	21
Cow's milk, over 2 years.	1	...	4	2
Cow's milk, over 3 years.	2	3	...	...
Cow's milk and other food,				
under 1 year.....	23	22	17	27
1 to 2 years.....	65	71	65	83
2 to 3 years.....	9	11	8	28
Over 3 years.....	2	4	9	10
Unknown .....	...	9	1	...

Summary of Table 14 of children under 1 year of age:

Food.	Good Sanitation.	Fair Sanitation.	Poor Sanitation.	Not given.
Breast milk	40	55	27	101
Cow's milk	42	39	50	52
Breast milk and other				
foods	21	55	32	83
Cow's milk and other				
foods	23	22	17	27

APPENDIX I.

INSTRUCTION FOR HOUSE TO HOUSE VISITORS.

1. To find cases and report all sick daily to Health Dept.
2. To instruct and leave literature. Instruction to cover (a) food, (b) water, (c) clothing, (d) sleep, (e) bathing.
3. If sick to arrange for follow-up work: (a) All Milk Commission cases to go to Milk Commission nurses. (b) All cases now visited by tuberculosis nurse to go to tuberculosis nurse. (c) All cases that can be cared for by the local settlement or day nurseries nurse to be so referred. (d) All other cases to Visiting Nurse Association.

This order had to be changed July 25.

4. Report nuisances on Sanitary Bureau blanks.

REQUIREMENTS TO BE CARRIED.

Health Department Record Cards, Sanitary Bureau Complaint Blanks, Pamphlets in languages, Health Department Picture Cards.

MISS FULMER'S INSTRUCTIONS TO HOUSE TO HOUSE VISITORS.

First: Every sick baby turned over to the Visiting Nurse Association must have a diagnosis and a doctor's instruction for care. This diagnosis and instruction to be secured either by the party turning over the case or by the Visiting Nurse upon her first visit.

Second: The Visiting Nurse cannot continue to visit a case where another nurse is in attendance.

Third: The record or report of any case turned over to the Visiting Nurse Association will be furnished upon application.

DOCTORS.

Cases must be transferred to their own doctors or doctors in the neighborhood whenever possible. Cases for care at the Centre unable to pay can be referred to the Health Department doctor assigned to that district.

HOUSE TO HOUSE.

House calls on cases unable to pay can be assigned to volunteers from Chicago Medical Society.

County Physician to be used in cases with no man able to work in family.

APPENDIX II.

EXAMINATION FOR NURSES.

1. What nationalities predominate in your district? What special problems arise in saving the babies of these different nationalities.

2. Should conditions in the congested districts be remedied or should people be induced to move away?

3. Does the income of the family have any influence upon the problem of summer diarrhea?

4. Are rents too high in the districts in which you work? If so, does that affect the prevalence of summer diarrhea, and how?

5. Are the houses generally in good condition? What improvements would you suggest?

6. In your judgment, whose fault is it if the district is undesirable? City? Landlords? Employers? The people themselves?

7. Do the mothers in your neighborhood know how to cook? Do they bake bread?

8. Do they keep house as well as your mother? If not, why not? What steps would you suggest to make them better housekeepers?

9. What, in your judgment, are the chief causes of summer diarrhea?

10. Should immigration be checked? Give reasons for your answer.

11. What should, in your judgment, be done this winter and next summer to prevent summer diarrhea?

Consult no one.

Write in ink on one side of the paper.

APPENDIX III.

THE POLISH PEOPLE.

EMMA CHURAN.

The Polish people have very little faith in doctors and have a great fear of hospitals. When the babies become ill, the mother tries all home remedies, the doctor being the last resource. They do not know that only contagious diseases are taken away, and fear the sick baby will be taken away.

There should be a place, a settlement house in the congested Polish district, where the Polish mother could go for advice, be it medical or legal advice, em-

ployment or relief that she seeks. This place should be conducted entirely by Polish speaking people, as advice from some one from her own country would mean much to her. This country seems very strange to her: she is suspicious, she cannot understand, she is troubled and does not know what to do. Some one must teach her and show her the ways of a great city, some one who has had the same experience.

The conditions in the congested foreign neighborhoods should be improved. If conditions were improved, people could not be induced to move away. The income of the family has much influence over summer diarrhea. Rents in the Polish districts are not high, but seem so when the income of ten dollars must be divided between eight or nine, or more. The mother takes in boarders to help pay rent: her time and mind are occupied with work: she hasn't time for her baby. Her baby becomes ill. She has no time, and thinks her babe will soon be better: the baby is no better, and she tries all the home remedies she ever heard of, whiskey being the leading one. The baby has the summer diarrhea from improper care and improper feeding. There is no money for a doctor: the mother will not take her baby to a free dispensary for fear that a free offer is a hospital trap for her and her sick babe. There should be a Polish baby tent in this Polish settlement house: then the mother would not be afraid to take her baby to a place where she has previously been helped.

The homes are generally in a poor condition. The mother has other work to do besides taking care of her house. She must help support the family, by taking in sewing or washing, or keeping boarders. The husband's wages are low, too low.

If the alleys and streets were improved and kept clean by the city, the housewife would have more incentive to keep her own bouse more tidy. The mothers are poor housekeepers. Their work in their home country was the care of cows and chickens. However, every mother knows how to make rye bread, although she does little baking when she comes to America, as it takes time to make bread, and she must hurry to her work. If the husband's wages were higher, the wife would not need to do other work than the care of her children and her home, and would have more time to read.

The chief cause of summer diarrhea is low wages. Immigration of Polish people should be encouraged. We have plenty of room and plenty to do in this beautiful land of farms. The Poles are excellent farmers, and should be encouraged to migrate to the West, where they could get a farm for a song, such a farm as would make the best land in Poland look like thirty cents. They would be happy on farms, for they could continue their customs and feed their children as they did in the old country, on vegetables and good milk, far away from too much meat and too much beer. The Poles love nature, and when they come to a big city and must live in basements dark and damp, it is hard on them. They must live in basements because they cannot afford better quarters. The husband knows no work but farming, and when he is obliged to begin at work entirely new to him, it seems very hard, and with little pay he grows discouraged. The wife is homesick and pines for the forest, the open air and the bright colors of her home country. With both parents sad, discouraged, almost desperate, the children become ill; there is no money, no place to go, only fear. Little can be done to prevent diarrhea unless the husband's wages be much improved.

I suggest that attractive pamphlets be printed on the care of infants, in detail, with short stories and experiences of mothers. A course of lectures in the Polish daily paper, and lectures by priests and doctors in Catholic churches and halls with stereopticon views would be beneficial this winter: and a Polish settlement house and a Polish tent for next summer.

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THE MODERN OPERATIVE TREATMENT OF VARICOCELE OF THE SPERMATIC CORD

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From the standpoint of scientific accuracy and completeness, the literature that has been published relative to varicocele is notoriously unsatisfactory. Despite the frequency of this pathologic and clinical condition, our knowledge concerning its significance, its etiology, its pathology, and the results of its treatment by operative measures is honey-combed with deficiencies. The purpose of this article is to stimulate and to facilitate the efforts of those who might feel impelled to elucidate some of the many as-yet-unsolved points of this definite anatomical and clinical entity.

At the Cook County Hospital, from January, 1906, to July, 1910, inclusive, 155 cases of varicocele were subjected to operation. At least as many other patients were refused operative relief. The operations performed were venous resection, scrotal resection or both combined. The youngest patient operated upon was 11 years old, the oldest 57 years. The ages of the patients is shown in the following table:

Years.	Patients.
11-20	36
21-30	77
31-40	18
41-50	10
51-60	3

Age not mentioned in eleven cases.

In four cases, the affection was right-sided; in ten, bilateral; and left-sided in 131 cases; in ten cases the side affected is not recorded. Six cases were associated with an inguinal hernia of the same side, and four with hemorrhoids. In a few cases, the presence of varicose veins of the leg is noted. Though the institution admits individuals of all races, not one of the patients operated upon was colored.

Quain¹ defines varicocele as follows: "A dilated, elongated and tortuous condition of the veins of the spermatic cord, due either to increased pressure within the vessels or to diminished resistance in the walls of the vessels and in the surrounding structures." The pathologic dilatation, lengthening, and tortuosity are limited almost always to the spermatic vein and its branches. Exceptionally, the cremasteric and deferential veins and their branches participate in the process. The veins of the scrotum may also show varicose dilatations. The spermatic vein originates at the posterior border of the testis as a thick, closely woven network and forms the pampiniform plexus. This plexus consists of from eight to ten veins, most of which lie anterior to the vas deferens; it passes

1. Quain, Richard: A Dictionary of Medicine, 1894.

upward, enters into the formation of the spermatic cord, courses through the inguinal canal and finally forms a single trunk in the abdominal cavity. In varicocele the venous lengthening, tortuosity and dilatation are permanent and are associated with histo-anatomical changes in the vessel walls. Temporary dilatation, such as compression of short duration can determine, and which disappears completely after the removal of the compressing agent, is not varicocele.

Varicocele may be unilateral or bilateral,² may be primary or secondary, that is idiopathic or symptomatic, may be complicated by the co-existence of other local pathologic states, hernia, vaginal hydrocele, tumors of spermatic cord, etc., may be associated with a fully developed or with an undeveloped testicle.³ In Gould's cases,³ the testicles were small but not wasted. The following varieties are recognized:

1. Simple dilatation and varicosity of the veins with or without slight scrotal relaxation.

2. Orchidoptosis.

3. Varicosities and orchidoptosis.

All authors state that the left side only is involved in by far the larger number of cases. Chassaignac,⁴ 80 to 90 per cent.; Dardignac,⁵ 92 per cent.; Istomin.⁶ Clinical observation amply confirms this statement.

Statistics are not in accord as to the frequency of the condition. Senn,² in 9,815 recruits examined, found varicocele present 2,078 times, that is in 21.17 per cent. In 15 of these cases the affection occurred on the right side; in 17 it was bilateral; in the remaining cases the left spermatic cord was the seat of trouble. French military commissions report varicocele as occurring in 6.4 per cent. of all recruits. No age is exempt. Though it occurs at all ages, it is rare both in the young^{7, 8} and in the old. Gould³ had a case of varicocele occurring in a boy aged 4 years, and another case in a boy aged 11 years. Its period of greatest incidence is between the ages of 20 and 40. Landouzy³ gives the following table:

In 13 cases the varicocele was first noted between 9 and 15 years.

In 29 cases the varicocele was first noted between 15 and 25 years.

In 3 cases the varicocele was first noted between 25 and 35 years.

Curling⁹ gives the following ages at which patients came under medical notice:

2 cases were between 10 and 15 years.

26 cases were between 15 and 25 years.

14 cases were between 25 and 35 years.

5 cases were between 35 and 45 years.

3 cases were between 45 and 65 years.

2. Senn, N.: On the Frequency of Varicocele and the Limitations of Operative Treatment for This Affection, Phila. Med. Jour., 1898, p. 1165.

3. Gould, A. Pearce: Two Cases of Varicocele with Undeveloped Testicle, with Remarks on the Nature of Varicocele, Clin. Soc.'s Trans., 1881, xiv, 75.

4. Chassaignac, Charles: Med. Rec., 1902, lxii, 603.

5. Dardignac, J. J. A.: Note sur le varicocèle et son traitement, Revus de Chir., 1895, xv, 721.

6. Istomin, E. K.: Zur path. Histol. und Klinik der Varikokele, Deutsche Zeitsch. f. Chir., 1909, xcix, 1.

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8. Broca, A.: Varicocèle chez l'enfant, Le Bull. Méd., 1902, xvi, 985.

9. Curling, T. B.: On Diseases of the Testis, 1878, Lindsay and Blakiston, Phila.

No race is immune. It has, however, been observed that negroes are practically free from varicocele. In them, the scrotum is close fitting and less lax than in Caucasians.

An intelligent understanding of the condition and of its treatment is aided by a correct knowledge of the regional anatomy of the spermatic cord and of the scrotum.

In idiopathic varicocele, the patients frequently complain of a sense of weight and of a dragging pain in the scrotum and groin, relieved on lying down and increased by severe bodily strain. One must not forget that an entire absence of subjective symptoms is not uncommon and that there are varicoceles of large size which produce no subjective symptoms whatever, no pain, no sexual debility, no wasting of the testicle. In idiopathic varicocele, the veins collapse when the patients assume the horizontal posture. In all types of varicocele, actual or imaginary, the morbid tendencies are frequently aggravated by quack advertisements, commercial medical literature and the artful suggestions of the charlatans.⁴

The symptomatic type of varicocele is almost invariably painless. One of its characteristics is that the veins remain distended when the patient assumes the reclining posture.

The secondary or symptomatic type of varicocele may be caused:

1. By neoplasms of the kidney. In sixteen cases of renal tumors, six had determined a symptomatic varicocele.¹⁰ Reclus¹¹ patient, an elderly man, presented a right-sided varicocele consecutive to a renal cancer.

2. By occlusion of the left renal or of either spermatic vein by a neoplastic growth. In Hochenegg's case,¹⁰ the symptomatic varicocele was due to the invasion and obstruction of the left renal vein by the renal growth.

3. By compression of the spermatic vein exerted by cancerous lymphatic glands or by renal tumors, by enlarged retroperitoneal glands. Delbet's patient,¹² aged 57 years, complained of a well-marked but painless right-sided varicocele, which had developed without apparent or appreciable cause and had increased progressively in size. The autopsy showed that a cancerous juxta-pancreatic lymphatic gland had, by compressing the spermatic vein, determined the venous ectasia.

4. By kinking of the spermatic vein due to inflammatory adhesions, to the weight of tumors, to prolapse of the left kidney, etc.

Among the many causes, all more or less inadequate, advanced as predisposing, contributory or exciting factors to the production of idiopathic varicocele, the following are the most frequently cited:

1. The great length, the vertical course, the dependent position, the great tortuosity and the frequent anastomosis of the spermatic veins.

2. The abnormal thinness of the vein walls.

10. Hochenegg, J.: Ueber Diagnose und Klinische Bedeutung der symptomatischen Varikokele bei malignen Nierentumoren, *Zeitschr. f. Klin. Med.*, 1907, lxi, 51.

11. Duplay and Reclus: *Traité de Chir.*, Paris, 1899, vii, 1215.

12. Delbet, Paul: Cancer du foie secondaire à un épithélioma juxta-pylorique de l'estomac demuré latent. Coexistence d'un varicocèle symptomatique à droite, *Bulletins et Mémoires de la Société Anatomique de Paris*, 1901, iii, 461.

3. The almost complete absence of support afforded the spermatic veins by the loose tissue which surrounds them.

4. The pressure exerted by the contraction of the abdominal muscles upon the spermatic veins as they course through the inguinal canal, as by straining at stool, etc. (1, 2, 3, 4, 5), are anatomical conditions common to all healthy men.

5. The plexiform arrangement of the spermatic veins in the scrotum and their termination in one small vein in the abdomen. The radicles of the spermatic veins emerge from the back of the testis, receive tributaries from the epididymis, unite and form a convoluted plexus called the spermatic plexus (plexus pampiniformis). Combined lumen of the veins is large as compared with that of artery (spermatic artery), so that the vis à tergo is reduced to a minimum.¹⁵

6. Aplasia^{13 14} predominating in the veins and valves thereof. "Varicocele is a congenital aplasia of the veins of the spermatic cord." (Escat). "Varicocele is a genito-crural fibro-muscular aplasia, chiefly affecting the left side" (Longuet). "Varicocele consists in a loss of tone of all the genito-scrotal tissues" (Longuet).

7. The absence in the diseased spermatic veins of efficient valves. The minor frequency of right-sided varicocele is partly due to the almost constant presence of an efficient valve at the point where the right spermatic vein debouches in the inferior vena cava. "These veins are provided with valves, but occasionally the valve at the orifice of the left spermatic artery is absent" (Cunningham's Anatomy).

8. Anything which tends to obstruct the free return of blood through the spermatic veins from the testis as, for instance, fecal masses in the cecum or in the sigmoid colon, pressing upon the spermatic veins.

9. Undue activity of the sexual apparatus. In many individuals, sexual fatigue is accompanied by a considerable relaxation of the scrotal tissues. In warm climates, lengthening and relaxation of scrotum is an almost invariable accompaniment of varicocele.^{16 17}

10. Occupations exposing the scrotum to frequent slight traumatism (horseback riding), and also such as necessitate continuous and prolonged standing. Varicocele is not uncommonly met in those who are long in the saddle and also in those who ride the bicycle to excess.

11. Heredity, traumatism, previous inflammatory states and other indefinite factors.

The reasons advanced to explain the great preponderance of left-sided varicocele are not convincing:

1. Inferior muscular development of the left side of the body from predominant use of the right.

2. Of the two spermatic veins, the left vein is the longer. Schultz says that the right spermatic vein's outlet is 1.5 inches lower than the

13. Longuet, L.: *Chir. réparatrice du varicocèle*, La Presse Méd., 1902, x, 879.

14. Deschamps, H.: *Les notions nouvelles sur le varicocèle*, Prog. Méd., Paris, 1906, xxii, 131.

15. Shober, John B.: *Varicocele of the Broad Ligament*, Am. Jour. of Obstetrics, 1901, xliii, 664.

16. Boland, Frank: *Varicocele and Its Operation*, Jour. Am. Med. Assn., 1908, I, 1888.

17. Aguirre, A.: *Jour. of the Assoc. of Military Surgeons of the U. S.*, 1905, xvi, 46.

left. The difference in length of the two veins is slight and does not exceed that between the two iliac veins, which latter has not led to a similar disproportion in the occurrence of varicosities in the veins of the lower extremities (Gould³).

3. The left spermatic vein is exposed to being compressed by a sigmoid colon loaded with fecal matter. Constipation is not more frequent in those that have varicocele than in other individuals of the same age and class. Constipation is frequent in old men; varicocele is rare in them. Those that look upon constipation as a cause of varicocele find it difficult to explain why the veins collapse instead of becoming turgid upon the assumption by the patient of the recumbent posture.

4. Rectangular implantation of the left spermatic vein into the left renal vein.

Varicocele¹⁸ of the broad ligament, a condition in the female that bears some analogy to varicocele in the male, is also of more frequent occurrence on the left side. Kanavel and Miller say: "It is to be noted that of twelve cases of primary varicocele of the broad ligament, six occurred upon the left side alone, in six it was bilateral, in no case occurring upon the right side alone."¹⁹ Authors have sought to explain the greater frequency of left-sided varicocele of the broad ligament by the same reasons that are advanced to account for the more frequent occurrence of left-sided varicocele of the spermatic cord.¹⁵

In the differential diagnosis of varicocele, one need only consider hernia, lipoma, hydrocele communicans. Varicocele may be confounded with an epiplocele because both have a cord-like arrangement.

Treatment.—If every case of varicocele is operated on indiscriminately, a fair percentage of patients will suffer permanent bodily harm, locally in the testis, and generally in body and mind.^{20, 21} It is a matter of general knowledge that many varicocele operations are performed in the absence of positive indications. Charlatans have found it very lucrative to needlessly operate upon cases of imaginary varicocele and upon cases of very slight dilatation of the branches of the spermatic veins. One cannot too strongly condemn the subjecting of a patient to a needless operation.

In the treatment of varicocele, operative surgery has a legitimate and well-defined sphere of action. In this, as well as in other surgical conditions, we consider it important that operative indications and contra-indications be formulated with precision.

We are of the opinion that operative intervention is absolutely contra-indicated and not permissible:

1. In pseudo-varicocele. When the veins of the spermatic cord are not the seat of lesions demonstrable to inspection or to palpation, a varicocele is not present. The surgeon must not accede to the importunities,

18. Dudley, A. P.: Varicocele in the Female. What Is Its Influence upon the Ovary? N. Y. Med. Jour., 1888, xlviii, 147, 174, 183.

19. Miller and Kanavel: Uncomplicated Varicose Veins of the Female Pelvis, Am. Jour. of Obstetrics, 1905, ii, 480.

20. Corner, E. M.: Varicocele—What of It? Lancet, 1905, ii, 993.

21. Howard, Frank: Varicocele—What of It? Lancet, 1905, ii, 923.

to the requests of hypochondriacs and of neurasthenics, who insist upon being operated upon for an imaginary varicocele. Many of these individuals are hardened, pessimistic and dangerous neuropaths.²² Owing to the fact that in these cases there is not any vein lesion present, surgical intervention does not benefit the existent orchialgia, testicular neuralgia, or other symptoms of which these patients complain.

2. In symptomatic varicocele. The cure of a symptomatic varicocele is dependent almost entirely upon the surgeon's ability to remove the causative factor.

3. In varicocele occurring in individuals suffering from constitutional states that forbid the performance of operations of election; even if such operations of choice do not entail risks. The various operations performed for the relief of varicocele are without danger to life. Among unfavorable constitutional states, the most important are malignant disease, diabetes mellitus, advanced renal, cardiac and hepatic affections, etc.

Indications for Operation.—Relief by operative means is indicated in all cases of varicocele:

1. In which there co-exists an inguinal hernia of the same side, be the hernia complete or incomplete, reducible or irreducible, an enterocele, an epiplocele, an entero-epiplocele. The pressure of an ill-fitting truss cannot only aggravate an existing varicocele, but can also lead to the development of this pathologic state. If a hernia co-exists with a varicocele the curative operation for the varicocele is to be supplemented at the same sitting by one for the radical cure of the hernia. Carta,²³ in 150 cases of varicocele, found six co-existing with a hernia of the same side. In twenty-one patients operated upon for varicocele, Narato²⁴ found inguinal hernial sacs in five. In one patient both the hernia and the varicocele were bilateral.

2. In which there co-exists on the same side, a hydrocele²⁵ of the tunica vaginalis testis. Both conditions, varicocele and hydrocele, should be remedied at one and the same operative sitting. For the varicocele, the operation described at the close of the article should be performed. The hydrocele is best met by incising longitudinally the tunica vaginalis and everting it around the epididymis and scrotal portion of the cord. The upper margin of the everted tunica vaginalis is then sewed to the subpubic fibrous tissue. Carta,²³ in 150 cases of varicocele, found in twenty cases, a co-existing hydrocele of the tunica vaginalis testis of the same side.

3. In which there is present on the same side an encysted hydrocele of the cord. The same incision gives access to both pathologic states.

4. Associated with or dependent upon the presence of a tumor of the spermatic cord.²⁶ In these cases, the surgeon is confronted by a double

22. Picqué, Lucien: Varicocèle et Obsession, Ann. des mal. des organes génito-urinaires, Paris, 1905, xxiii, 1169.

23. Carta, F.: Semaine Méd., 1908, xxviii, 606.

24. Narath: Radikal Operation der Varikokele, Wiener Klin. Wchnschr., 1910, xlii, 73.

25. Spillman, G.: Note sur quatorze observations personnelles de cure chirurgicale du varicocèle par le procédé de Parona, Arch. Prov. de Chir., 1902, ii, 221.

26. Patel and Charlier: Les tumeurs du cordon spermatique, Revue de Chir., 1909, xxxix, 119.

indication, the removal of the neoplasm and the correction of the varicocele. Two of Narath's cases presented a lipoma of the cord.

5. Having a history of recurrent attacks of phlebitis and of thrombosis (Burghard,²⁷ Longuet²⁸). Here the operation is preferably performed during a quiescent period; at other times, a troublesome spreading thrombosis may originate at the seat of ligation.

6. In which there has been an accidental or spontaneous rupture of one or more veins of the affected spermatic cord. The rarity of rupture is partly explained by the mobility of the spermatic cord, and by the elasticity of its various tunics, which together enable the veins to easily shift away from traumatic insults. Patel²⁹ reports a case of co-existing hydrocele and varicocele of the same side, in which there occurred an apparently spontaneous rupture of one or of several veins of the varicocele. This rupture converted the hydrocele into a hydro-hematocoele. Patel exposed and ligated the bleeding points, removed the extravasated blood, and subjected the hydrocele or hydro-hematocoele to appropriate operative treatment. Rupture of a varicocele may prove fatal. A case of this nature is reported in the *Lancet*.³⁰ The patient had a left-sided varicocele; as a consequence of a blow received on the left scrotum, the latter swelled to the size of a child's head. Incision of the scrotal swelling was followed by discharge of fresh blood, which continued to escape until the patient suddenly died. It was demonstrated that the uncontrolled and fatal hemorrhage resulted from traumatic rupture of a varicose vein of the spermatic cord.

7. That show more than a moderate degree of venous dilatation and tortuosity, because in these cases the functional integrity of the testis is either seriously menaced or involved. It is desirable to rid the patient of the disagreeable consciousness of the continual presence of a testicular tumor (Lydston³¹). In mild cases without symptoms, operative treatment is not required. The patient's mental annoyance and exaggerated apprehensions must be allayed by sensible advice (Bennett). In a case reported by Loumeau,³² the patient was 18 years of age and presented for treatment a voluminous and painful varicocele extending downward as low as the middle of the thigh. Berger,³³ in one patient, resected a spermatic vein the calibre of which equaled that of the little finger.

8. That are productive of neuralgic pain in the testis, of pain radiating along the spermatic cord and down the thigh, associated or not with pain in the back and a characteristic dragging sensation. That is, in all types of painful varicocele, the painfulness of which is not controlled by

27. Burghard, F. F.: *A System of Operative Surgery*, Oxford University Press, 1909, iii, 639.

28. Longuet, L.: Un cas de thrombophlébite du cordon traité par la phlébectomie, *La Presse Méd.*, 1899, vii, 166.

29. Patel, M.: Rupture du varicocèle, *Ann. des maladies des organes génito-urinaires*, Paris, 1904, xxii, 1521.

30. Death from Rupture of a Varicocele, *The Lancet*, 1860, i, 295.

31. Lydston, G. Frank: *Radical Treatment of Varicocele*, Alkaloidal Clinic, Chicago, 1901, viii, 449.

32. Loumeau: Guérison opératoire d'un énorme varicocèle, *Gaz. Hebdomadaire des Sciences Méd. de Bordeaux*, 1903, xxiv, 186.

33. Loison: Traitement du varicocèle par le procédé de Narath, *Bull. et Mém. de la Soc. Chir.*, 1900, xxvi, 636.

the wearing of a well-fitting suspensory and the employment of judicious non-operative therapeutic measures. No constant relation exists between the size of a varicocele and the degree of pain and other subjective symptoms present. Not uncommonly the patient is more irritable than the varicocele is painful. Varicocelic pain is due to various causes: compression of nerve-filaments by varicose veins; neuritis, due to ectasia of the vaso-nervorum; atrophy of the gland; the patient's psychical state, etc.

9. That are associated with serious nervous disturbances, such as neurasthenia, psychic disorders, tendency to suicide, etc.¹⁷ These patients harassed by the presence of their varicocele, often develop a distressingly hypochondriacal state of mind. The operation does not make the neurasthenia worse, but often improves the general state of the patient.

10. Showing a steady increase in size and progression of symptoms in spite of appropriate non-operative treatment: avoidance of constipation, cold ablutions of the parts, sexual hygiene, the wearing of a well-fitting suspensory, etc.

11. That show calcareous changes in the vessel-walls. Dardignac,⁵ and others, report cases of varicocele in which the markedly dilated veins were the seat of calcareous incrustations.

12. When the patient wishes to enter some public service: civil, police, military, or naval, and the varicocele is the only existent physical disqualification.

13. If disease of the opposite testicle be present: hydrocele, tuberculous epididymitis, cystic disease of the testis, etc. In the presence of disease of the opposite testis, it is important to preserve the functional and anatomical integrity of the unaffected testis. LeFort³⁴ presented to the Société Centrale de Médecine du Nord a patient afflicted with a left-sided varicocele extending as far as the lower third of the thigh. The right testicle extended lower than the left, was hypertrophied and the seat of a hydrocele.

14. If the opposite testis is lost.

15. In which the nutrition of the testis is threatened. A varicocele can impair the nutrition of the testis in various ways: The process may extend to the intra-testicular veins; by its volume it may injuriously compress the organ; the passive hypermia of the gland may prove deleterious to the latter's nutrition, etc. "When highly or rapidly developed, the dilatation of the veins interferes so much with the nutrition of the gland as to occasion wasting" (Curling⁹).

16. Associated with evident scrotal changes, marked pendulousness, profuse scrotal sweating and obstinate dermic lesions of the scrotum.

17. When the condition is bilateral.

It is our opinion that all the various subcutaneous operations for varicocele should be completely discarded. If a varicocele be of such a degree or nature as to necessitate operative relief, only such methods of treatment should be resorted to as are appropriate. The patient's objections to an open operation should be surmounted or disregarded. One of the

34. LeFort: *Gaz. des Hôpitaux de Toulouse*, 1901, 15 ième année, p. 222.

most manifest tendencies of modern surgery is to abandon all subcutaneous methods of operating, and among the subcutaneous methods of treatment that have fallen into almost complete disuse can be mentioned the injection treatment of goiter,³⁵ the injection treatment of hernia, of vaginal hydrocele, Bottini's operation for prostatic hypertrophy, subcutaneous suturing of fractured patellæ,³⁶ etc. It is incontrovertible that the less an operator knows of anatomy and of surgical operative technic, the more reluctant he is to abandon subcutaneous methods of operating.³¹

Advantages of the Open Operation for Resection of Varicose Spermatic Veins.

1. Under the guidance of the sense of sight, every step of the operation can be carried out with precision. Insufficient or excessive removal of veins does not occur. The operator removes only that amount of veins, the ablation of which cannot lead to undesirable immediate or remote sequelæ. With the subcutaneous methods, the veins can be ligated, but not resected.

2. The inclusion of the vas deferens in the ligature can always be avoided. In the subcutaneous operations, a thickened vein may be isolated under the impression that it is the vas, and the vas be ligated with some of the varicose veins. The ligation of the vas deferens permanently occludes the excretory duct of the testicle of that side. From the standpoint of procreative power, the testicle whose vas has been ligated is and remains valueless.

3. More complete hemostasis is secured. With the open method, the complete control of hemorrhage is easily effected. In the course of the subcutaneous operations, a small or a large vessel may be accidentally punctured; such a puncture can lead to the formation of a hematoma, can give rise to an extravasation of blood into the scrotal tissues. Either of these accidents necessitates an incision of the scrotum, followed by evacuation of the extravasated blood, and ligation of the bleeding points.

4. A slight lengthening of the usual incision enables the surgeon to appropriately treat co-existing neighboring pathologic states, as hernia, vaginal hydrocele, neoplasms of the spermatic cord, etc.

5. The simplicity of technic of the open operations places them within the reach of all operators.

The permanent occlusion or obliteration of the ligated, divided or undivided, spermatic veins is effected by the organization of the thrombi that form on the proximal and distal sides of the ligatures placed on the non-divided vessels, or on the ligated proximal and distal ends of the divided vessels. In the subcutaneous methods, the expectation of permanent cure is also based on the organization of thrombi forming on each side of the ligatures. For the organization of a thrombus time is required. The transformation of a thrombus into a block of connective tissue is

35. Heineck, A. P.: *Modern Surgical Treatment of Exophthalmic Goiter*, ILL. MED. JOUR., 1908, xlii, 157.

36. Heineck, A. P.: *The Modern Operative Treatment of Fractures of the Patella*, Surg., Gynec. and Obst., 1909, ix, 177.

effected not by the cells contained in the thrombus, but by the proliferation of the cells of the injured vessel-wall. The vessels of the occluding block of connective tissue are derived from the vaso-vasorum of the ligated vein. Previous to the organization of the thrombi, undue activity on the patient's part may lead to the dislodgment or detachment of thrombotic particles, and to emboli formation and its consequences. Therefore, all forms of operative treatment that do not exact confinement of the patient to bed for at least a week are to be condemned. Early activity on the part of the patient has determined such unfortunate accidents as pulmonary infarcts.³⁷ I have had two such cases. Both recovered.

For the treatment of varicocele, many various operative procedures have been suggested. Vince³⁸ treats varicocele by resecting and shortening the lengthened and relaxed cremaster muscle. He incises the skin from the external abdominal ring to the superior pole of the testicle. An incision of the same length divides the intercolumnar fascia and the cremasteric fascia and muscle longitudinally. The cord is elevated from its bed and retracted. Vince then applies transversely on the cremaster muscle two forceps at a distance of 6 cm. from each other and resects that portion of the muscle extending between the forceps. The two muscular extremities having been sutured to each other, the cord is replaced on the surface of the muscle, and the longitudinal incision closed. In exceptional cases, Vince supplements this procedure by partial resecting of the diseased veins.

Brault³⁹ resects the varicose veins and, in addition, excises an oval flap from the postero-external surface of the scrotum. He recommends the employment of his method in all cases of varicocele that have recurred after bilateral resection of the scrotum. For the operative treatment of varicocele, he considers bilateral resection of the scrotum the operation of choice.

Brault's operation consists of the following steps:

1. Excision of an oval postero-external flap.
2. Longitudinal division of the spermatic cord's sheaths.
3. Resection of the varicosed spermatic vessels.
4. Careful suturing of the sheaths of the spermatic cord.
5. Closure of wound in such a way that the resulting line of suture has the shape of an inverted V.

For the cure of varicocele, Parona²⁵ has devised an operation that still enjoys a degree of popularity. Its different steps of execution are the following:

1. Make 6 cm. incision extending from the external abdominal ring downward upon the neck of the scrotum.

37. Lewis, Dean D.: *The High Operation for Varicocele*, Surg., Gynec. and Obst., Chicago, 1906, iii, 534.

38. Vince: *Nouveau procédé de Cure Chirurgicale du varicocèle*, Jour. Méd. de Brux., 1904, ix, 525.

39. Brault, J.: *Excision postéro-latérale du scrotum combinée avec la résection des veines dans les varicocèles compliquées* Bull. and Mém. de la Soc. de Chir., 1900, xxvi, 704; Griffiths, Joseph: *The Effects upon the Testes of Ligature of the Spermatic Artery, Spermatic Veins and of Both Artery and Veins*, Jour. of Anat. and Phys., 1895-1896, xxx, 80.

2. Isolate the testicle. The testicle and the spermatic cord are completely freed so as to permit their delivery, their enucleation through the scrotal incision. The cord is isolated as far as the external abdominal ring.

3. Incise longitudinally and then evert the tunica vaginalis testis. After eversion, the upper margin of the tunica vaginalis is sutured with catgut to the internal pillar, to the pubic fibrous tissue and to the external pillar in such a way as to convert the vaginal tunic into a sac ensheathing the dilated veins. The empty scrotal sac created by the suspension of the testicle is obliterated by suturing of the opposed walls.

Parona aims by this approximation of the testicle to the external abdominal ring:

1. To lessen the height and weight of the blood column in the spermatic vein and branches.

2. To favor the venous return circulation.

3. To aid the action of the cremaster muscles.

4. To obtain a permanent firm physiologic suspension of the testicle. The everted and fixed tunica vaginalis maintains the testicle elevated, exerts moderate compression upon the varicose veins and to a degree hinders the elongation of the spermatic cord. Parona's operation is not serviceable in the presence of a markedly pendulous scrotum or of a varicocele too voluminous to be contained in the vaginal suspensory. It has been objected to Parona's operation that inasmuch as it deprives the testicle of its vaginal envelope it is anti-physiologic.

Though the fore-mentioned methods have, in some hands, given good results, we recommend their general abandonment and the employment of the operative procedures, separately exceptionally, conjointly almost always, that we are about to describe.

We aim by these two operative procedures, performed at one and the same sitting:

1. To suppress the subjective symptoms: Pain, sensation of weight and fulness of the scrotum, dragging sensation along inguinal canal, etc.

2. To secure the re-establishment to physiologic conditions of the altered venous circulation and thereby to prevent degenerative changes in the testis. Should the testis be undersized or somewhat atrophied call the patient's notice to the condition previous to operation; it becomes more apparent after resection of the veins.

3. To restore to the scrotum its normal contour and dimensions.

4. To support the testicle in such a way as to permanently hinder its descent as well as to prevent the elongation of the spermatic cord.

5. The removal in part of the diseased vessels.

In the operative treatment which we practice and recommend for varicocele, we make a direct and an indirect attack upon the existing pathologic conditions. We ablate some of the varicose veins; we shorten the relaxed and lengthened scrotum. It is a mixed method suppressing by resection of the varicose veins, the main element of the condition; and by resection of the pendulous scrotum, an accessory, a contributory element of great importance.

This double operative procedure, resection in part of the diseased veins, and resection of the pendulous and attenuated scrotum, can, without haste, be readily performed in about fifteen minutes. It entails no risks to life and, when performed by careful and experienced hands, is never followed by undesirable immediate or remote sequelæ. An assistant is necessary.

The patient and the operative field having been prepared, according to the teachings of modern aseptic surgery, as for a major operation, it is well to have recourse to general anesthesia. We know that these operations can and have been performed successfully with the aid of local anesthesia, but clinical observation and operative experience have taught us that they *can* be performed immeasurably better with the patient under a general anesthetic. General anesthesia secures a more complete abolition of pain and enables the surgeon to do his work deliberately and precisely.

OPERATION PROPER

1. Patient in the dorsal recumbent posture, the lower limbs straight out, short distance apart.

2. Repreparation of the operative field—inguinal, pubic, and scrotal regions.

3. The operator makes an inch or an inch and a half oblique incision, the midpoint of which corresponds to the pubic spine, dividing the skin and superficial fascia and exposing the spermatic cord. This incision is practically a suprapubic incision. It is easier to isolate the veins close to the inguinal canal than near the testis, and as here fewer vessels have to be ligated, the mass included in the ligature is smaller. Thomson says that the secret of the operation is to attack the veins high up where they are lying in a distinct tube of fat and fascia, distinct from the vas.

4. The spermatic cord is then isolated and elevated from its bed. The cord's envelopes, the infundibuliform fascia, the cremasteric fascia and muscle, and the intercolumnar fascia, are incised longitudinally and thus the spermatic veins and branches are made easily accessible.

5. Identify the vas deferens and if possible the spermatic artery.³⁰

The vas deferens, owing to its volume, its consistency, and its cord-like feel, can always be recognized; the spermatic artery, however, is at times extremely difficult to positively identify. As the pulsations of the spermatic artery are often imperceptible, they do not furnish a constant guide to the vessel. Bear in mind that the artery is always close to the vas deferens, that it accompanies it and follows the same course, and avoid including the vessel in the ligatures.³⁹ Do not injure the vas deferens and its blood-supply. Leave the veins of the vas deferens and also those that course upon the cord's sheaths undisturbed. These vessels should not be ligated, should not be resected as they are important for the re-establishment of the collateral circulation. The spermatic veins have numerous anastomoses with the veins of the vas deferens, of the scrotum, of the septum scroti. Operate with as little traumatism as possible, and observe the most rigorous asepsis. Let there be no needless handling of

the vas deferens, of the epididymis, of the testis. If the vas deferens or testicle be roughly handled, orchitis or epididymitis may supervene.

6. The condition is usually limited to the spermatic veins or pampiniform plexus. The larger portion of this plexus can be resected. To resect all of the veins of the spermatic cord is a grave mistake. In Porter's⁴⁰ case, after an operation for varicocele, the testicle, owing to a sufficient blood-supply not having been left, became inflamed, was unable to recover, and sloughed.

Isolate the veins for a greater distance than the amount of vessels to be removed, so that when the divided ends are united too great kinking of the vas will not take place.⁴¹ Though the vas deferens is about 18 inches long, the actual distance traversed by it is, owing to its somewhat convoluted course, not more than 12 inches. Therefore shortening of the cord by resection of the veins does not interfere with the functions of the vas deferens. Most operators ligate the veins with strong catgut at two different points, about two inches apart. The intervening portion of the veins is resected. Other operators ligate the veins about half an inch above the epididymis, and again a little below the external abdominal ring and resect the intervening portion. It goes without saying that these compressing ligatures are applied perpendicularly to the course of the vessels. The upper and lower ligatures are tied to each other; there results from this apposition of the ends of the several veins an induration which need cause no alarm as it gradually undergoes absorption, in about three months (Potter⁴²).

The ligation and resection of the left spermatic veins interrupt the weight of the venous-blood column that previously extended from the left renal vein downwards to the testicle. The knotting together of the upper and lower ligatures of the divided veins assists the enfeebled cremaster muscle in its endeavors to support the dependent testicle. This also removes more or less continuous strain from the vas deferens, and its accompanying vessels. After approximating the ligatures, the proximal and distal stumps are sutured to each other.

Eads⁴³ and others advise avoiding injury to the genito-crural nerve which supplies the cremaster muscle. If this nerve is cut, the portion of the cremaster muscle distal to the seat of the division is deprived of its power of contractility, its blood-supply is diminished, it wastes, weakens, stretches and the natural consequences are a flabby scrotum.

7. Carefully inspect the stumps for oozing. Great care must be taken to secure complete hemostasis, for small bleeding points may give rise to large-sized hematomata. Slight hemorrhage, such as would occur from a damaged vein, leads to the formation of a hematoma which can by exerting pressure upon the remaining veins prove a potent factor in determining edema and thickening of the scrotum, surrounding tissues and testis.

40. Porter, F. J. W.: Operation for Variocoele: Sloughing of the Testis During Convalescence from Enteric Fever, *Brit. Med. Jour.*, London, 1903, ii, 134.

41. Furniss, H. D.: Varicocele, *Am. Med.*, Phila., 1904, vii, 891.

42. Potter, E. S.: Suprascrotal Operation for Varicocele, with Ligature of the Spermatic Artery, *N. Y. Med. Jour.*, 1903, lxxvii, 789.

43. Eads, B. Brindley: Demonstration, *Med. Standard*, Chicago, 1904, xxvii, 521.

Post-operative hemorrhage may be due to slipping of the ligature, to the use of a faulty knot, to defective ligature material.

By tying together the proximal and distal ends of the divided vessels, in case of slipping of ligature, it is easier to locate the bleeding point. Krone⁴⁴ anchors the divided stump of veins above, to fibers of ring and below, to Poupart's ligament.

Corner and Nitch⁴⁵ report two cases of varicocele in which resection of the veins was followed by post-operative hemorrhage. In these two cases the pelvis was filled with blood which had escaped from the retracted end of the spermatic artery projecting through a rent in the peritoneum.

8. After all hemorrhage has been arrested, the divided sheaths of the cord are sutured and this is followed by the closure of the operative wound.

As previously stated we always supplement this resection of the veins of the spermatic cord by partial amputation of the scrotum. We consider this step essential to effect a prolonged if not a permanent cure of the condition. In over one hundred cases operated on during the last two years at the West Side, Reliance, University, and Cook County hospitals, we have not noted a single tendency to recurrence.

The relaxed pendulous and attenuated state of the scrotum associated with varicocele suggests retrenchment of the redundancy. By resection of the scrotum, a natural suspensory is formed which will keep the testicles in good position and prevent a recurrence of the disease. A close fitting scrotum, by better supporting the testes, by keeping them higher, prevents traction upon the veins of the pampiniform plexus and thus renders them less liable to dilatation.

The skin of scrotum is thin, elastic, is pigmented and marked by a longitudinal raphé and when contracted by transverse ridges. In scrotoctomy performed *secundum artem*, the vas deferens and its vessels and the spermatic artery are not exposed to injury.

The technic for scrotoctomy which we are about to describe possesses the following advantages:

1. Rapidity and simplicity of execution. Interrupted sutures are not used; they complicate and prolong the operation and do not afford as much protection against hemorrhage as the continuous suture-ligatures employed.

2. Adaptability to the cure of relaxed scrotum irrespective of cause. It will be found serviceable to correct scrotal overdilatation caused by voluminous varicoceles, large scrotal hernias, large hydroceles, testicular neoplasms, etc. It builds out of the scrotal envelopes a natural suspensory and removes all the scrotal tissue that appears needless, superfluous.

3. It requires little, if any, post-operative treatment. As catgut is the only suture and ligature material used, there is no call for the removal of stitches or ligatures. The portion buried in the tissues is absorbed; the remaining portion is cast off.

44. Krone, C. R.: Suprapubic Varicocele-Ectomy, Occidental Med. Times, Sacramento, 1898, xii, 301.

45. Corner, E. M., and Nitch, C. A. R.: The Immediate and Remote Results of the High Operation for Varicocele, Brit. Med. Jour., 1906, i, 191.

4. No special instrument is required. No clamps are used. Two needles, three artery forceps and a pair of scissors suffice to accurately perform the operation.

5. Absolute control of operative hemorrhage.

6. Absolute prevention of post-operative hemorrhage.

7. Safety and efficacy. In over one hundred cases, our results have been uniformly good. We have had a few cases of healing by delayed first intention, but, in these cases, even healing by secondary intention does not unfavorably influence the ultimate results of the operation.

Scrotoctomy would have enjoyed a greater popularity, if a method had been devised previous to our own, enabling the surgeon in this operation to easily and surely control hemorrhage. It is the fear of hemorrhage, operative and post-operative, the fear of hematoma formation which has deterred many surgeons from performing this operation, and which has led others to devise ingenious clamps for the prevention and control of this accident. There is not any clamp, whether convex or concave, whether designed to be applied proximally or distally to the site of section, that has proved universally efficient. It is now conceded that clamps do not furnish an absolute safeguard against hemorrhage. Accidents have followed their use by competent hands (Dardignac, Lucas-Championnière, etc.). We have discarded the use of clamps, special or others, and have succeeded in working out a technic which absolutely eliminates all danger of hemorrhage, primary or secondary.

In resecting a scrotum, the line of section may be unilateral, may be bilateral; may be longitudinal, may be transverse. We almost invariably resort to a bilateral transverse line of section. The same technic, however, is serviceable for a longitudinal line of section. In longitudinal resection, the cicatrix falls in the line of the median raphé, or rather reconstitutes it, and the scrotum is in no way deformed. Transverse bilateral resection possesses the advantage of better acting upon both halves of the scrotum at the same time, and of giving a cicatrix that does not in any way interfere with future penile erections.

Proceed as follows:

1. The assistant with the fingers of one hand spreads the scrotum to its maximum, and with the fingers of the other hand pushes the testes towards the inguinal canal. It is desirable that neither the testes nor the tunica vaginalis be traumatized or injured. The operator then estimates the amount of scrotal tissue which it is proper to remove in the case at hand. Enough must be removed so that the new scrotal sac will firmly support the testes. Care must also be taken not to remove too much; otherwise, the new scrotal sac will cause discomfort by compressing the testicles against the pubic bones.

2. It has been observed in this operation that the vessels of the septum scroti were frequently the origin of the post-operative hemorrhage. Therefore, in scrotoctomy, these vessels must be kept in mind. In operative surgery, the customary and elective way of arresting hemorrhage is by ligating vessels at their bleeding points. Surgeons rarely depart from

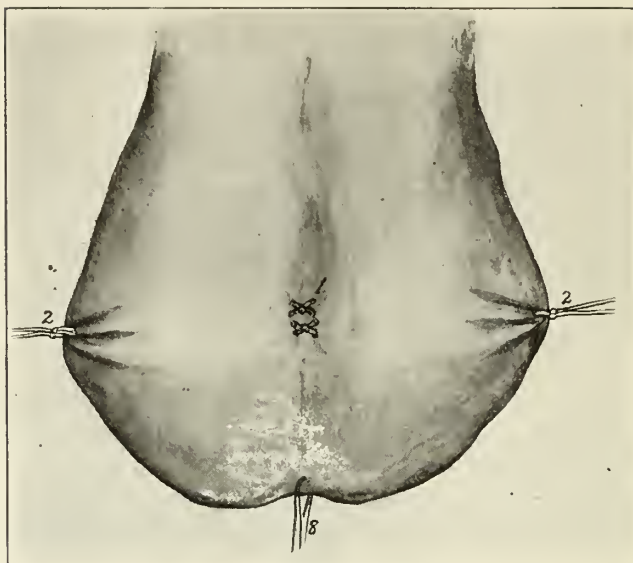


Figure 1

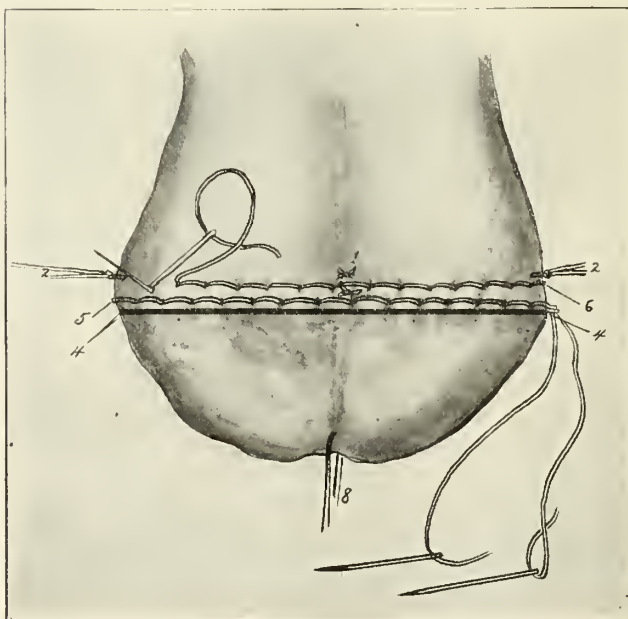


Figure 3

1. Ligatures perforating the anterior and posterior scrotal walls in the region of the median raphe.
2. Right and left lateral ligatures, knotted and temporarily left long, to be held taut, and serve as guy-ropes during introduction of the two suture ligatures.
3. Suture ligature showing method of introduction and how it includes within its loops the tissues comprising the scrotal walls.
4. Line of scrotal section.

this rule, and the ligation in continuity of a vessel for the arrest of hemorrhage is an exceptional procedure performed only under exceptional conditions. In the ligation of a vessel, the compressing ligature is placed perpendicularly to the course of the vessel and directly upon its walls. This is the usual procedure and is known as immediate ligation. In scrotectomy, however, we make use of mediate ligation, the compressing loop of catgut is placed perpendicularly to the long axis of the vessel,

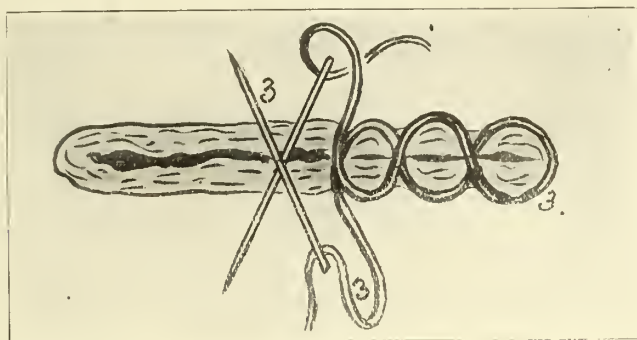


Figure 2

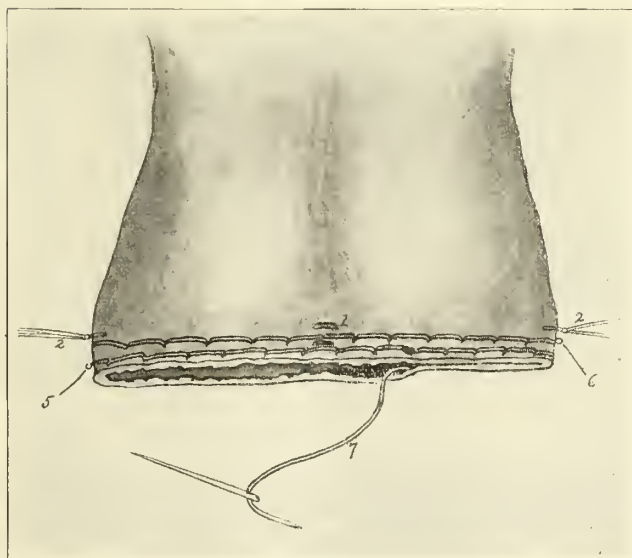


Figure 4

5. First suture-ligature inserted at about $\frac{1}{4}$ cm. from line of proposed scrotal section.

6. Second suture ligature inserted at about $\frac{1}{2}$ cm. from proposed line of scrotal section. Note that needle punctures of upper suture ligature correspond to about the middle of the loops of lower suture ligature.

7. Subcuticular stitch approximating edges of scrotal wound.

8. Forceps helping to spread out the scrotal tissues.

and in such a way that between it and the vessel wall there intervenes a layer of scrotal skin and underlying tissues.

3. Two catgut ligatures are introduced at the point marked 1 (Figs. 1, 3 and 4); they are knotted and cut short. These ligatures perforate the anterior and posterior scrotal walls at about the median raphe and are designed to control, to prevent hemorrhage from the septal regions. They are important factors in the securing of hemostasis.

4. One ligature is introduced at each lateral margin of the scrotum, (2, Figs. 1, 3 and 4). These two ligatures are knotted, and the ends for the time being left long, serve as guy-ropes maintaining the scrotal tissues taut while the two suture-ligatures are being introduced. After the insertion, knotting and cutting of the two suture-ligatures, the ends of these two guy-rope sutures are cut short.

5. The point of scrotal resection has previously been determined (4, Figs. 1, 3 and 4). Two long ligatures of thick catgut are selected and each one is needled at both ends. The needles which I prefer for these suture-ligatures are long straight needles, flattened from side to side (straight spear-pointed needles are also useful). No needle-holder is used. The needle-eyes must be large enough to allow the easy gliding into them of the catgut. The assistant, by the aid of the two lateral ligatures (2, Figs. 1, 3 and 4) and a forceps or tenaculum placed at point 8 (Figs. 1 and 3), spreads out fan-shaped the portion of scrotal tissue which the surgeon is about to ablate.

6. At about .25 cm. from the proposed line of scrotal section, the operator makes the middle of one of the double-neededled strands of catgut saddle the lateral scrotal margin nearest to him, and then proceeds with the introduction of the first suture-ligature as shown in Figure 3. This is a continuous stitch somewhat analogous to the cobbler's stitch, extending from one lateral scrotal margin to the other and including in its loops the anterior and posterior scrotal walls and intervening tissues (5 and 6, Figs. 1, 3 and 4). It is seen that the two needles are used at the same time; and that they constantly go in diametrically opposite directions (Fig. 2). Upon reaching the further lateral margin, the ends of the suture-ligature are tied, knotted and cut short.

7. A similar continuous, cobbler-stitch-like suture-ligature extending from one lateral scrotal margin to the other is now inserted (6, Figs. 3 and 4) at about $\frac{1}{4}$ cm. within the one just introduced, or at about .5 cm. within the line of proposed scrotal section (4, Figs. 1, 3 and 4). Like its mate, it perforates the anterior and posterior scrotal walls and its loops are intended to approximate the scrotal tissues and to control hemorrhage. By looking at the illustrations, it will be seen that the needle punctures of one suture-ligature correspond to the middle of the loops of the other suture-ligature. After this suture-ligature has covered the entire transverse width of the scrotal sac, it is tied, knotted and its ends are cut short.

8. The operator now cuts off with scissors, the redundant scrotal tissue. Number 4 corresponds to the line of scrotal section.

9. Usually the edges of the wound gape and this is overcome by the introduction of a continuous subcuticular catgut stitch (7, Fig. 4). The wound is dressed, rubber tissue being placed over the dressing to prevent the possibility of contamination by urine.

10. A double spica gauze-bandage is now so applied as to maintain the testicles elevated upon the abdomen, and to exert slight but painless compression upon the new formed scrotal sac. As after other operations performed upon the spermatic cord or the scrotum, the patient may suffer for a few days from urinary retention. This is easily and safely overcome by gentle and aseptic catheterism.

Resection of veins is occasionally followed by some edema of the scrotum, a little engorgement of testes, and a moderate effusion into the tunica vaginalis. This gradually disappears and need occasion no alarm. So as to maintain the operative region dry, it is well to change the scrotal bandage every few days. The patient is confined to bed two weeks, and for a month thereafter, but no longer, wears a well-fitting suspensory.

CANCER OF THE UTERUS*

GEORGE C. KASDORF, M.D.

ROBINSON, ILL.

It is not within the scope of this paper to deal with the many experiments now going on upon the smaller animals, mostly vertebrates such as fishes, mice, etc. No definite results have so far been obtained; the relation of cancer of the lower animals to cancer of man has not been established, and I therefore wish to review that which is not new to us.

One woman out of every eight, beyond the age of 45, dies of cancer, and the mortality among men is only somewhat less. This terrible disease has increased of late years in all civilized countries. In the United States, from 9 deaths per 100,000 of population, in 1850, it has risen, in 1900, to 43 deaths per 100,000. In the registration area of this country, in 1906, it was 70 per 100,000. This astonishing increase has raised the deaths from this cause so that now approximately half as many die of cancer as of tuberculosis.

(Memorandum given to the President by Dr. H. R. Gaylord, director of the New York State Cancer Laboratory).

According to Stengel about one-third of all cases of cancer in women affect the uterus. Cancer of the cervix-uteri is a very common disease; that of the corpus-uteri is rare in comparison with cancer of the cervix. The older statistics seem to show the disease to begin in the body of the uterus in about 2 per cent. of all cases of cancer of this organ. This percentage, however, is perhaps much too small.

Like cancer in the other parts of the body the disease has been observed at almost every period of life, except in infancy. It occurs most frequently during the active mature life of the women between the ages of

* Read at a meeting of the Crawford County Medical Society at Robinson, Illinois, Sept. 15, 1910.

30 and 50, more so during the latter decade of this period. It is a disease of child-bearing women. Sterile women seem to grow fibroids instead of growing children in their womb. Statistics show that women who develop cancer of the uterus have borne, on an average, five children. The stout, well-nourished mother of a large family is very prone to cancer.

The predisposing causes point towards abuse of that organ, wherefore a sterile woman may develop cancer of the cervix who has had traumatism caused by dilatation or incision of that part of the organ.

Early Diagnosis.—Upon the importance of this all writers are agreed. In the early stages the disease may be eradicated with every probability of a permanent cure. Cancer of the uterus is more favorable for surgical attack than cancer in most other parts of the body. It is a matter that comes within the province of the family physician. We may safely assume that in these days the great majority of practitioners are fully alive to the importance of the subject, and yet the number of cases that are discovered too late for curative measures is very great.

Wiggins considers that the responsibility for this failure to recognize the disease during the earlier months of its invasion rests largely upon the general practitioner into whose hands the patients usually come first, and who seems to be largely imbued with the popular idea that all sorts of menstrual irregularities may occur during the last years of the woman's child-bearing period of life. These symptoms he considers of no serious import, unless accompanied by a story of pain, foul vaginal discharge and evident cachexia, forgetting that these, as Baldwin pointed out, are symptoms not of incipient but of inoperable cases.

In very many cases the physician cannot be blamed, for although they have been treated for hemorrhage without an examination even being suggested by the attending physician, it has much more often been the case that the patient has either not mentioned the matter to her physician until too late, or has not consented to a vaginal examination until the specialist has been called in.

The Clinical Symptoms.—In cancer of the cervix the discharge is at first watery, later bloody, purulent, fetid, excoriating. In early stages hemorrhage is slight, occurring after exertion, straining at stool, coitus. At first menorrhagia, later, also, metrorrhagia. Hemorrhage after the menopause is very significant of cancer. Debility is not an early sign; it may be delayed a year and a half. Pain is not constant; a late, seldom an early symptom. The seat of pain is the back, from peritoneum involved, sometimes the thighs or remote parts of the pelvis. In stenosis of the cervix there is uterine pain, dysuria, vesical and rectal tenesmus.

The diagnosis is made by inspection, by its induration, ulceration, friability, fetor, tendency to bleed easily on touch, histologic character. A specimen is obtained from scrapings or a piece cut out of the diseased area. The left supraclavicular glands are sometimes enlarged. The physical signs of body cancer are, uterus enlarged, ultimately becomes somewhat softened, cervix patulous. Its cardinal symptoms: in 78 cases the first symptoms involved were leukorrhea in 45, hemorrhage in 21, pain in 12.

Copper sulphate test: upon touching freely with a 20 per cent. solution if benign, the tissue turns white; if cancer, bleeding starts, which becomes worse upon each application.

The differential diagnosis of several conditions should be made; viz., from syphilis, simple erosion, hypertrophy, cervical polypus, myoma, sarcoma, papilloma and tuberculosis.

Prognosis.—The duration is from one to three or five years. The progress is more rapid in the young, slower in advanced age. More rapid in cylindrical than in squamous-cell cancer, or in cancer of the body. The latter is more favorable if diagnosed early. Death results from exhaustion, sepsis, peritonitis, or uremia. Operative prognosis is better the earlier operation; usually it is good in the squamous-cell variety which has not invaded the vaginal walls, and in all cases where metastasis by lymphatics has not yet occurred. About 12 per cent. of cases of cancer of the cervix operated upon in the Johns Hopkins Hospital remained free from recurrence after five years; 5 per cent. is the rule.

Treatment.—Operation, early abdominal or combined vaginal and abdominal hysterectomy, going well beyond the disease. The vagina should be excised a half-inch or more beyond the diseased area and tubes and ovaries removed, especially in body tumors. Vaginal hysterectomy may be chosen in nephritic subjects, in old age, when abdomen is very fat, and in very early cancer of body of the uterus.

A case is inoperable when bladder, rectum, or broad ligaments are much invaded or when the vagina is extensively involved. As a rule hysterectomy is contraindicated when the fixation of the uterus is such that the cervix cannot be drawn down to the vulva.

Palliative treatment in cases inoperable: Cautey, the diseased tissues are curetted away, bleeding is stopped by local means or uterine arteries ligated if necessary. The base is cauterized with Paquelin cautey, the wound cavity is packed forty-eight hours with gauze. Solution of bromid of gold and arsenic m. xx-xl t.i.d. internally retards growth. The fetor is controlled with vaginal douches of chlorinated soda 1:16 or of potassium permanganate 2 per cent. solution. Calcium carbide is used for its anesthetic, antiseptic and hemostatic effect, dusted in powder or packed against the growth in small pieces, vagina protected by a tamponade, repeat weekly. Caustic paste: heat sulphate of zinc till water of crystallization is driven off, add strong sulphuric acid to make a paste; the vagina is protected with tampons impregnated with sodium bicarbonate. Fumes of nitric acid are used. Chlorid of zinc 50 per cent., a compress dipped into solution, dried and applied to surface. Vienna paste, potassa cum calce, U. S. P.

In discussing early diagnosis Veit points out that a chaneroid of the vaginal portion occurs in early life, and malignant disease of the uterine body after the menopause. An early diagnosis of both these forms is not difficult; the former being characterized by bleeding on slight mechanical disturbance; the latter by spontaneous bleeding after the menopause. Scrapings examined with the microscope usually give positive evidence. Cancerous nodules in cervix, or infiltration of the cervical mucous mem-

brane, are more difficult of detection; the latter causes a catarrhal discharge, the former simply pain in the sacrum, pressure and similar vague symptoms. Bleeding does not occur early. Swelling of the cervix, particularly behind the external os, thickening and increased density, together with a certain patulousness of the os to the examining finger, combined with microscopical examination of a portion of suspected tissue, may aid in making a diagnosis.

A writer in the *British Medical Journal*, commenting on a paper by Gessner, remarks that clinical symptoms are apt to be extremely misleading. Thus in old women, pyometra and senile endometritis may cause as fetid a discharge as ever is seen in cancer. The sound, however, skillfully applied, is no sure guide in the detection of cancer of the body; even after dilatation of the cervix it may fail to touch a patch of incipient cancer or to prove to the investigator that the patch, should it be touched, is really cancerous. Gessner insists that the curette, followed by microscopic examination of the material which it brings away, is the only trustworthy way of diagnosing. Relics of ova or broken down mucous polypi, when carried away on the tip of the sound, are often taken for cancerous tissue, so that, he says, we must know how to use the microscope, even when we know how to scrape.

Wiggins dwells on the fact that pain in these cases is an unreliable symptom, only occurring late in the disease except in certain cases, where the patient complains that she suffers from attacks of agonizing cramp-like pains which recur during the latter part of each afternoon. Such a symptom, when present in an elderly woman, is almost pathognomonic of cancer of the uterine body and is due to pent up secretions in that organ. Hemorrhage is a constant symptom, but of the later stages of the disease, as is also the foul smelling vaginal discharge. Savor and Giles reported cases of cancer in the cervical stump after amputation.

The employment of means in inoperable cases: Methylene blue has been advocated by More and Madden. Penrose, Jessett and others have advocated the use of zinc-chlorid; the manner of applying is thus described by Wiggins: After the hemorrhage has been gotten under control by previous curettage and packing with pledgets of cotton soaked in hydrazone, the packing is removed and the parts are thoroughly irrigated. The vagina and vulva should next be well anointed with a salve composed of one part of sodium bicarbonate and three parts of vaselin. The uterine cavity is then packed with small pieces of cotton wrung in a solution of zinc chlorid from 50 to 100 per cent., according to thickness of remaining uterine tissue. Any excess of this solution is rapidly removed with sponges, and the vagina filled with cotton soaked in a solution of sodium bicarbonate. Forty-eight hours later the packing is removed and the parts again irrigated. The hemorrhage is controlled, the offensive discharge disappears for a considerable time, and the patient being relieved in a large measure of her sepsis, improves in appearance and gains rapidly in weight.

Lucas-Championnière advised the use of calcium carbide application: The vagina is irrigated, then a small piece of the carbide is to be placed

against the ulcerated surface. Bubbles soon appear showing that acetylene gas is being generated. The vagina is now to be carefully packed with iodoform gauze. The packing should remain from three to four days; the parts are then irrigated and all crusts removed. The procedure can be repeated at intervals of from two to six weeks. The claim is that it stops hemorrhage, suppresses odor, and relieves pain in a large proportion of cases so treated.

This plan has not been received without criticism. Ries affirms that its action is identical with that of ordinary caustic lime. He is inclined to attribute the beneficial effects rather to the preceding curettement than to the calcium carbide and cautions the profession against expecting any marked results from its use.

Jonesco has suggested the ligation of the arterial supply; the two hypogastrics he also tied. Although the improvement could be only temporary, he thought the results were encouraging. On the other hand, Loewy, in a communication addressed to the Paris Anatomical Society, criticizes the operation from an anatomical standpoint, showing that it does not retard the growth of the disease.

Gottschalk has suggested the following procedure: The growth is first thoroughly cauterized with Paquelin cautery, so as to make the surface as clean and aseptic as possible, and to diminish it in bulk. Then a circular incision is made around the vagina in the healthy part below the growth, the cautery being used to make the incision. A cuff of vaginal wall is now stripped up and turned inwards, covering up the growth. The cuff of tissue is kept in place by a gauze tampon for a week. The cicatrization resulting from this procedure closes the vagina below the growth, and the squamous epithelium now turned towards the growth will resist invasion for five or six months, perhaps. During this time the patient is spared the misery and exhausting effect of foul discharges and hemorrhage.

Parson reviews the subject of cancer from the aspect of its parasitic origin and in view of the fact that the salicylates exert a powerful inhibitory influence on the growth and development of the saccharomycetes, he suggests the internal administration of these drugs in inoperable cases. The suggestion is made admittedly on theoretical grounds.

ILLINOIS MEDICAL JOURNAL

THE OFFICIAL ORGAN OF THE ILLINOIS STATE MEDICAL SOCIETY

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NOVEMBER, 1910

THE POLITICAL SITUATION

As the result of activity on the part of the medical profession there comes from all parts of the state evidences that the politicians are beginning to recognize professional demands.

We look with considerable interest for the returns of the November election, and feel quite certain that some advances will be found. Never has the profession demanded of the lawmakers so much consideration, and never before have they been in position to ask what they are allowed to demand. It is true the bill for a department of health and a position in the president's cabinet failed to pass the last Congress.

We should not be discouraged by this, but constantly push the propaganda, which has for its object the health of the people, and high standard for the medical profession. The people are beginning to wake up to the importance of these particular demands of the medical profession, and to recognize the selfishness of those who are opposed to them.

In Illinois the renovation of the State Board of Health is long past due, and this state will lag behind sisterly commonwealths as long as the present regime continues. It cannot last much longer, and when changed Illinois will soon take the position she held so long, as leader in sanitary and professional matters.

THE ROCKEFELLER INSTITUTE

There may be some criticism on the methods pursued by Mr. Rockefeller in accumulating the vast wealth which has made him the richest man in the history of the world. But there can be no valid criticism of the manner in which he is disposing of his money.

Recently the gift of a large sum to the institute bearing his name in New York City, was announced, and no doubt the Institute will under its able management bring forth results worthy of the endowment which it possesses. It is well known that Mr. Rockefeller has given a large sum for the study and suppression of the hook-worm disease in the South. All of these gifts redound to the credit of Mr. Rockefeller and do much to turn aside criticisms which have been made on his business methods.

MALICIOUS ANIMAL MAGNETISM

Hampton's Magazine for October, 1910, contains a noteworthy article on the vagaries of Christian Science, by Dr. Jastro, professor of psychology in the University of Wisconsin.

Professor Jastro uses no uncertain language in his description of the follies of Christian Science. He shows that these supposedly intelligent people are just as superstitious as the most ignorant European peasant. He says: "The system of ideas back of Christian Science is a very crude form of pseudo-philosophy, but that the notions and practices which it encourages have much in common with pseudo-science and superstition." It is another form of witchcraft. "We cannot define consistency for a system founded on inconsistency. But if denying ills annihilates them, why should not asserting ills create them? Mrs. Eddy is a paranoiac." Finally it is shown that much of Mrs. Eddy's nonsense has been suppressed by the very clever men who manage her, and presumably have made respectable fortunes out of the credulity of her followers.

ILLINOIS STATE MEDICAL SOCIETY—PROCEEDINGS OF THE COUNCIL

The Council met pursuant to call of the chairman in Chicago at the University Club at 10 o'clock a. m. on Thursday, October 6, 1910. There were present Chairman Black, Councilors Percy, Mitchell, Pettit, Stealy, Smith and Harris, President Cotton and Secretary Weis, Editor Kreider, Assistant Editor Baxter and ex-Councilor Harvey, by invitation.

The minutes of the previous meeting were read and approved.

The secretary presented a letter from Dr. B. R. Schenck, Chairman of the Library Committee of the Wayne County Medical Society, Detroit, Mich., asking that the library be placed upon the free list of our JOURNAL. This request occasioned considerable discussion and the following motion was offered by Stealy and seconded by Pettit, that all public and medical society libraries outside of the State of Illinois be supplied with the ILLINOIS MEDICAL JOURNAL at \$1 per annum. Carried.

Chairman Black invited President Cotton to address the Council giving an outline of his intended work for the ensuing year.

President Cotton took the floor and gave it as his impression that he would, in his visit to the various component societies, speak mostly upon the subject of organization. The discussion of an hour's duration upon this question became general and was participated in by Black, Weis, Pettit, Percy, Mitchell, Smith, Harris and Stealy.

Councilor Percy as chairman of the Committee on Medical Education requested an expression from the Council along what particular lines this committee should devote their energies. After a free discussion of the subject it was moved by Pettit and seconded by Mitchell that this Council heartily endorses and commends the work of the Council of the A. M. A. on Medical Education, and hereby instructs the Committee on Medical Education of the State Society to continue its labors along the same lines. Carried.

Assistant Editor Baxter read a letter from George E. Pettey, secretary of the National Association of Medical Advertisers, regarding certain advertisements of the Broughton Sanitarium of Rockford. It is moved by Percy and seconded that the Committee on Management of the Journal be governed in its action on advertisements by the custom of the A. M. A. in receiving advertisements.

Adjourned for luncheon. Reconvened at 2 p. m.

Here Councilor Stealy suggested that the members of McHenry County were organizing a medical society and would in the near future apply for a charter of the same. The secretary read a letter and resolutions of Dr. James A. Egan, secretary of the Illinois State Board of Health. It is moved by Pettit and seconded by Stealy that the same be received and placed on file and the receipt thereof acknowledged by the secretary. Carried.

Herein came Councilor Newcomb.

The secretary presented a letter from Dr. Henry F. Lewis, of Chicago, requesting the secretary's permission to obtain a copy of the official minutes of the last day's session of the House of Delegates at Danville from the stenographer.

It is moved by Harris and seconded by Stealy that the secretary be instructed *not* to give his permission or to furnish a copy of the stenographer's official minutes of the proceedings of the last day's meeting of the House of Delegates. Further that said Lewis be notified that an abstract of the same has been published in the JOURNAL. Carried.

It is moved by Harris and seconded by Pettit that the editor be instructed to request of the secretary of the State Board of Health that he furnish a copy of the proceedings of the State Board of Health in so far as the same relate to matters of public and professional interest for publication in the ILLINOIS MEDICAL JOURNAL. Carried.

Adjourned to meet at the call of the chair.

E. W. WEIS, Secretary.

WHY NOT TELL THE TRUTH?

The American Medical College, of St. Louis, has followed the lead of Bennett, and joined the regular school. Dr. James Moores Ball is the dean, J. J. Link treasurer, W. G. Burdick secretary. "No need of eclecticism, homeopathy, or any other sect of medicine, although we have undoubtedly learned something from each."

We have previously told the history of the purchase of the Bennett College and the underlying reasons for its conversion into an allopathic institution.

Quite a few journals are commenting on the change of faith of the American Medical College, of St. Louis. As a matter of fact, the case is similar to Bennett. Both colleges are stock companies. Dr. Link, an allopathic surgeon, bought the majority of stock, and installed new trustees, who at his bidding converted it into a third-rate regular college.

Correspondence.

DR. COLLINS' VERSION OF THE ADJOURNMENT OF THE HOUSE OF DELEGATES

PEORIA, ILL., October 5, 1910.

To the Editor:—I have read the two communications in the September number of the JOURNAL regarding the Danville meeting. There are a few errors in them to which I wish to call attention.

On page 332 Dr. Stubbs says: "Dr. Lydston's resolutions were being discussed, and while a delegate (and I think it was Dr. Lydston) had the floor and was talking on the resolutions, a motion to adjourn was made and the acting president, Dr. Collins, put the motion. This was illegal."

The statement of Dr. Stubbs is not correct. The facts are as follows: Dr. Lydston had read his resolutions and had made his arguments in favor of them before a motion for their adoption had been made. In doing this he was out of order, but I permitted it for a few minutes so that no charge of unfairness could be made against me. I was about to call his attention to the proper method of procedure when he closed his argument.

Some one made a motion to lay the resolutions on the table. This motion was seconded and put before the delegates. I was in doubt as to the aye and nay vote and paused when the time came to announce the result. A roll-call was requested and allowed. The result of the roll-call showed the reason for my doubt as to the aye and nay vote. The vote was something like forty-one for and forty-two against laying the resolutions on the table.

Then some one made a motion to adjourn, which was seconded. The motion to adjourn was not made until after the disposal of the question of tabling the resolutions. It was, therefore, in order, and the putting of the motion was not illegal, as Dr. Stubbs contends. Furthermore, the second communication corroborates the above statement of what occurred.

The second communication does not contend that there was anything illegal in putting the motion to adjourn. And yet, *the name of Dr. Stubbs it attached to both communications.*

I wish to correct one sentence in the second communication. It reads: "The Chair refused and a large number of delegates left the hall." It should read: "A large majority of the delegates left the hall and the Chair refused a roll-call."

When the motion to adjourn was put the Chair believed, and does now believe, that a majority voted aye, and he said: "The motion is carried; we are adjourned." As he said the word "adjourn" he struck the table with the gavel. Dr. Mammen, of Bloomington, and several others told him that they plainly heard him say that we were adjourned. Immediately after the result was announced a large majority of the delegates left the hall, and only a few were left (nineteen according to the count of Dr. Weis). Then ensued a scene that would have done credit to a Chicago ward caucus. The few remaining delegates gathered around the Chair and endeavored to intimidate him and force him to call for a roll-call. It would have been manifestly unfair to have ordered a roll-call when fully three-fourths of the delegates had left the hall and the Chair refused to do it.

Yours truly,

CLIFFORD U. COLLINS.

ECLECTICISM TO THE FRONT

From the *Eclectic Medical Journal* of Cincinnati, Ohio. The following article was found in a recent issue of the Cincinnati publication. It tells of the woes of the Illinois Eclectic brethren in a very distressful way. A second article appeared as an editorial.

CHICAGO, ILL., August 20, 1910.

TO THE MEMBERS OF THE ILLINOIS STATE ECLECTIC MEDICAL SOCIETY
AND OTHERS WHOM IT MAY CONCERN:

Brothers:—There is a crisis in Eclectic affairs, and we must come to the rescue. Pernicious influences have been at work in our State Society which have worked our ruin. We have been liberal, we have been generous; too much so, and have allowed allopathy to come into our society; and have allowed some who called themselves eclectics to dominate our State Society in favor of commercialism. We have taken no account of the fact that our eclectic college at Chicago has been destroyed through these pernicious influences working against the individuality of eclecticism.

Within the last few years the allopathic medical societies, acting for the American Medical Association, have invited eclectics to join on the condition that we cease to be sectarian; and as our school is not and never has been sectarian, which fact the allopaths know well, we must count this move only one of many intended to weaken us.

At the time of the last meeting of our State Society a new allopathic state society was announced and named "Therapeutic," and our members

invited to join it. This is another effort to break up our eclectic organization, and if possible, deliver us to allopathy and commercialism. At the same meeting allopathic diplomas were being sold to our physicians for ten dollars each.

Now, brother eclectics, do you not see how these pernicious influences undermine and destroy our school of medicine? Do you not see the necessity of being free of all these damaging influences and of maintaining the individuality of American Eclecticism?

Eclectic physicians have nothing to gain by joining allopathic societies, but have no doubt been forced or cajoled into doing so by promises which never materialize. The maintenance of medical parties is essential to good government. In the old times when allopaths ruled laws were enacted which made it a crime for an "irregular" to heal the sick, and history repeats itself.

Come out, then, fight the good fight, and keep the faith with your friends.

Allopathic rules are nearly absolute in Chicago; already our connection with the Cook County Hospital has come to an end, and the commissioner of health will not employ eclectics on his staff of visiting physicians, and we may lose our representation on the State Board of Health.

The Illinois State Eclectic Medical Society has been expelled from the National Eclectic Medical Association on account of allopathic influences in our State Society.

Who is to blame for these disasters which have come to us? Certainly they are due to members of our State Society who seek the ruin of eclecticism: spies, as it were, from the allopathic camp. We must act promptly, before we are completely undone or destroyed.

To determine our present strength and prestige we invite an answer from each eclectic graduate in the state to the following questions:

Are you in favor of maintaining the individuality of the American eclectic school of medicine?

Are you in favor of making the Illinois State Eclectic Medical Society an auxiliary of the National Eclectic Medical Association?

Are you in favor of establishing an eclectic medical college at Chicago, as is necessary to the maintenance of eclecticism in the state?

Will you help to maintain the Eclectic Medical Society of the State of Illinois as the representative eclectic organization in this state?

Please address reply to H. S. Lowrance, M.D., Chebanse, Ill., president Illinois State Eclectic Medical Society.

Yours fraternally, EDWARD J. FARNUM, M.D.
42 East Madison Street, Chicago, Ill.

REPORT OF THE FORTIETH ANNUAL MEETING OF THE COLORADO STATE SOCIETY

COLORADO SPRINGS, COLO., Oct. 16, 1910.

Dear Doctor Kreider:—Having recently attended the meeting of the Colorado State Medical Society, held in this city October 11-13, and thinking possibly the readers of the ILLINOIS MEDICAL JOURNAL might be interested in hearing of same, I am sending you this communication.

The Committee of Arrangements had everything in readiness and a most complete preparation for the meeting imaginable. At the registration desk a member of the Committee of Arrangements was always to be found and there were about 225 registered. Upon registering, the member was given a badge, program of the meeting and a program of the social entertainments that had been arranged for their pleasure. The ladies were not forgotten. Entertainments for the three afternoons and two evenings were provided especially for them, and all who participated were enthusiastic in their praises of same.

The meetings were held in the ball-room of the Antlers Hotel. This large room was tastefully decorated for the occasion. There were quite a number of women doctors present, and during one of the sessions one who was a vice-president was called to the chair and made a most acceptable presiding officer. The papers presented were good, up-to-date, live productions. The discussions were prompt, to the point, very interesting and practical. One thing quite striking was the few papers read by title. Nearly all those appointed to open the discussions were present and ready. All sessions were general sessions. No sectional work, the latter having been tried and not found satisfactory. The House of Delegates held sessions in the hotel parlors. The committee meetings were subject to call of their chairman. Denver bears about the same relation to Colorado that Chicago does to Illinois, and this is quite strikingly shown in the attendance upon the meeting of the society.

One great convenience as a time saver was the use of blackboards to make announcements. Their use also avoided the disturbing of the society's proceedings. The name of the author of the paper and those discussing the same were also written upon the board; this is quite a convenience to a stranger and greatly appreciated by those unacquainted with the profession of the state. Large charts and diagrams were used by quite a number, who read papers, to more clearly and forcibly bring out the particular point upon which they desired especial emphasis. The last half day's session was devoted to reports of interesting cases, papers of five minutes, discussion three minutes. Showing cases and exhibiting pathologic specimens:—this was an especially interesting session; there were no waits or dragging of time; in fact, there was so much good material on the program that a clinical department was formed in addition to the literary program. The annual subscription banquet, at which there were about one hundred present, closed the fortieth annual meeting of the Colorado State Medical Society. This was a most elaborate and enjoyable affair. After partaking of the seven courses spread, there was a regular avalanche or landslide, as they are called here, of wit and wisdom. The physicians who attended this meeting throughout could not go away without being benefited thereby, both scientifically and socially, for there was an abundance of both science and good fellowship at this representative gathering of the medical profession of Colorado.

Yours very truly,

B. B. GRIFFITH.

COUNTY AND DISTRICT SOCIETIES.

ADAMS COUNTY

The October meeting of the Adams County Medical Society was held Monday, October 10, in the Chamber of Commerce rooms, Quincy, with President Dr. D. M. Knapp in the chair. Others present were Drs. Beirne, Nickerson, Rice, Wessels, Ray Mercer, Ericson, Williams, Ball, Ruth, Blickhan, Christie, Austin, Kirk Shawgo, Gabriel, Ross, Knox, A. D. Bates and Wells. Guests and visitors: Dr. J. E. Miller, Pittsfield, Ill., and Drs. Pearce, Steiner and Green, Quincy. Dr. Nickerson made final report of the work of the legislative committee during the recent primary campaign and related how the work of the physicians of the district had accomplished the defeat of Hon. Jacob Groves for the legislature on account of his obnoxiousness to the medical profession; also that all the candidates from this district were now much in favor of higher medical standards and safeguards for the health of the people. This campaign was accomplished without much expense to the society. Dr. Elizabeth B. Ball addressed the society on behalf of the Public Health Education Committee of the A. M. A. and her desire to inaugurate the work in this city and county. The work was endorsed by the society and a committee composed of Drs. Williams and Ericson was appointed to assist Dr. Ball in the work. Dr. Christie spoke in behalf of a committee present from the Board of Education of the city of Quincy who desired the co-operation and assistance of this society in inaugurating the work of medical inspection of the pupils in the public schools. Each member of the committee was given the privilege of the floor and frankly and earnestly brought before us the needs of such a movement. A motion prevailed that the Adams County Medical Society endorse the movement and lend its assistance and to this end a committee composed of Drs. L. H. A. Nickerson, C. A. Wells and J. K. Reticker was appointed to meet with the Board of Education and devise a plan for the practical initiation of the work. The society then adjourned to Hotel Newcomb for luncheon. Reassembling in the afternoon, Dr. J. E. Miller of Pittsfield, Ill., was introduced and read a paper on "Major Surgery in Suburban Hospitals," which was well received and discussed. Dr. Miller showed a series of 315 major operative cases with a mortality of but four out of that number. Three of these were old, neglected cases of appendicitis wherein general peritonitis had occurred. The excellence of Dr. Miller's technic and the remarkable results he has achieved elicited the praise and admiration of the members. A rising vote of thanks was given the essayist and he was also elected to honorary membership in the Adams County Medical Society. The president called attention to the visit of Dr. Henry Schwartz of Washington University, St. Louis, to be made to this society on Monday, November 14. Dr. A. M. Austin of Mendon was recommended by the censors and was unanimously elected to membership. The applications of Drs. Warren Pearce and E. A. Weisenhorn were received and referred to censors. On motion society adjourned.

C. A. WELLS, Secretary.

COOK COUNTY

CHICAGO MEDICAL SOCIETY

Regular Meeting October 5, 1910

A regular meeting was held October 5, 1910, with the president, Dr. Alexander Hugh Ferguson, in the chair. President Ferguson delivered a short address on "Democracy in Medicine." Mr. Arbuthnot Lane, London, England, read a paper (by invitation) entitled "Chronic Intestinal Stasis," which was discussed by

Drs. A. J. Ochsner, Franklin H. Martin, Arthur Dean Bevan, W. R. Cubbins, Fenton B. Turck and the discussion was closed by Mr. Lane. Dr. Louis Wickham, of Paris, France, read a paper (by invitation) entitled "Radium Therapy," which was discussed by Drs. William Allen Pusey, Heliodor Schiller, and in closing by Dr. Wickham.

On motion of Dr. Pusey, a vote of thanks was extended to Mr. Lane and Dr. Wickham for their interesting and instructive papers. Adjourned.

Dr. Alex. Hugh Ferguson, the president, after making a few opening remarks, took up the Democracy of Medicine as follows:

THE DEMOCRACY OF MEDICINE

It took many centuries before the evolution of democracy was crystallized and before such an institution arose. Thomas Jefferson, the "Apostle of Democracy," defined it in the following words: "All men are born equally free and independent. Therefore all government of right originates from the people. All power residing originally in and being derived from the people, all officers of the government and their substitutes and agents are at all times accountable to them."

In the development of democracy as it pertains to the United States, the medical profession has taken an active part since the Declaration of Independence. Strange to say, however, the medical profession in its own organizations has not strictly observed the principles of democracy as they are applied to state and national governments. The organization of our national medical association with its supporting state and county societies embodied only a portion of the regular profession in the United States. These three governing bodies always have been a stumbling block to our progress in that all the physicians legally qualified to practice medicine are not represented. Under the law of medical registration all doctors are born equal; then the *registration* certificate in each state legitimately is the *birth* certificate into the medical profession.

The board of health of each state furnishes the only unit of standard through which anyone is entitled to practice medicine. In order therefore that our medical organization be democratic in principle, it is highly essential that this standard—the registration certificate—be recognized and duly respected. The licensed practitioners of a state are to medicine what the voters from among the people are to the state government. It is a happy thing that in the state of Illinois no cult or craft, ism or pathy, is legally recognized by the state board. The Chicago Medical Society—the society of Cook County—provides that any legally qualified practitioner can become a member who is of good moral and professional standing and who does not claim to practice any exclusive system of medicine (Article I, Section 2). How then can anyone say that the medical profession of Cook County is not united? Why should we not assert ourselves and demand of the authorities of the government our just rights and prerogatives? Heretofore, instead of obtaining the substantial things that belong to our profession we have been scantily considered.

At the hazard of repetition your president is constrained to say for the sake of clearness that in order for the county medical societies in Illinois to be indisputably democratic in every particular the certificate to practice medicine should be the prime qualification for membership, because it is the legal standard to practice medicine in this commonwealth. This would give equal rights to all legally qualified practitioners. The voice of the majority of such an organization, emanating as it would from the unification of the profession, should command the respect and attention of all the people. Then no coterie of medical men could logically set themselves up as representing the medical profession; nor could public officials from the governor down justly ignore our medical organizations—the Chicago Medical Society, etc.

The Chicago Medical Society—the society of Cook County—with its central body and fourteen branches, strengthened scientifically by its special societies, is to be congratulated on the completeness and efficiency of its organization.

We admit that any organization founded for the purpose of safe-guarding the general public, cannot perform its functions conscientiously without taking an active part in local and state government. I decry the idea of the medical profession tolerating party politics within its ranks, especially when the health of the people is at stake. Most emphatically under certain conditions—for instance, in the management of epidemics of contagious diseases or in the direction of institutions for the ill of the people—there should be no such thing as a democratic or a republican doctor, but every doctor should be a member of the democracy of medicine. The proceedings of our society are not always harmonious; various interests sway men here and there; our transactions cannot all be conducted without honest differences of opinion; but after the final round-up every year after our elections, we should be prepared to give our loyal support to the majority for the ensuing year. To be powerful, influential and true to the people and to the profession, we must not go back on a referendum or an officer of our organization. Therefore, your president commands the undivided support of every member of the Chicago Medical Society.

Insurgency sometimes is a God-given thing. It is possibly the only power through which we are capable of rectifying a wrong or gaining improvements in the face of the opposition of the powers that be and still retain our integrity as an organization. Insurgency is the force kindled to oppose outrages on the spirit of democracy. It embodies belligerent methods and may lead to a revolution. History has it that insurgency founds a new and higher order of things, both local and national. We, the officers elect, claim and possess by virtue of our position the leadership of the Chicago Medical Society for this year. We owe this leadership not to party politics but to insurgents who numbered among them practitioners young and practitioners old, teachers, professors and specialists, of different creeds and nationalities, educated variously—and some they say vicariously—but all legally qualified, who knew and felt that it was high time for the principles of democracy to be applied to the Chicago Medical Society. The untenable political platform of the supporters to the cause of the special societies was so emphatically defeated at the polls that I do not deem it best to make further reference to it. Many a determined struggle has been waged for the principles of democracy since the birth of organized government. Just think what a tedious task it has been to conform the rights of society and of the professions to those great political ideas—equality and freedom to all. In our little differences here we are only filling in and adjusting things to correlate with the beauty and simplicity of the origin of our republic. From the urchin in the school and the student in the college to the President of the United States a freedom to be outspoken exists—a freedom which ever works for imperative and befitting betterments. A social, professional and political reformation is now raging throughout the land. An active worker cannot escape being the target of hatred, animosity and ridicule. From a personal consideration, whatever your president may lack in ability to do justice while in office, he hopes to make up for by stimulating an enthusiasm within you which will always direct your efforts in the right channel. I believe that the time has arrived—in fact has long since been here in disguise—for a further development in all our medical institutions, county, state and national.

In times past whenever an attempt was made to obtain anything from the President, governor, mayor or from any legislative body, the fact was thrown in our faces that "The medical profession is so divided that we can't do anything for it."

Let this movement of betterment, namely, equal privileges as voters to all in the medical profession, extend to every other county in every other state and accumulate force and power until the democratic principles of the medical profession roll on to Washington and there be properly recognized.

We are proud to say that, in Chicago at least, we can not swerve to the right or to the left, but keep on gaining our rights at every move. At the present moment one great need is felt in our society and that is the proper weekly means

of communicating our principles, our actions and our productions, not alone to the medical profession at large, but also to the people. We are strong enough, able enough and influential enough to have a journal of our own and also to issue our own records. A journal of the Chicago Medical Society would be right in line for the proper development of medical journalism in America. The objection may be raised that we already have too many medical journals in the field; that is true, but is confounded by the fact that *not one* of them is *ours*. We already have the *Journal of the A. M. A.* and the ILLINOIS MEDICAL JOURNAL, but not a journal of our county. Let us then turn the limelight from the individuals to our society. Let us begin to record history for the medical profession of Chicago and follow the example set by the profession of London and Paris over fifty years ago. A guarded connection with the associated press should be made for the benefit of the public.

CHRONIC INTESTINAL STASIS*

MR. ARBUTHNOT LANE, LONDON, ENGLAND

By intestinal stasis, I mean such a delay of the contents of the intestines in some portion of the gastrointestinal tract, but more particularly in the large bowel, as allows of the absorption into the circulation of a larger quantity of toxic material than can be dealt with effectually. This delay results from a mechanical alteration in the normal arrangement of the drainage apparatus. In early life, it is produced by an abnormal distention of the intestine, consequent on too frequent feeding, or by the use of articles of diet of an unsuitable nature. Later, it is brought about and accentuated by the erect posture of the trunk, which is assumed from the time of getting up until going to bed.

The changes are primarily mechanical and secondarily toxic. The mechanical changes are: 1. An abnormal fixation of the pylorus by the development of a new band, which attaches it to the under surface of the liver in front of the transverse fissure. This band serves the purpose of affording an additional ligament to the stomach. 2. This fixation of the pylorus may result in the production of a kink, which may be sufficient to interfere with the normal functioning of the stomach and duodenum. In consequence of this, areas of engorgement of the mucous membrane arise in the first part of the duodenum or in the lesser curvature of the stomach. 3. There develops on the under surface of the mesentery of the last few inches of the small intestine a new band, which at first forms part of the under surface of the mesentery. Later it forms a ligament distinct from the mesentery. This ligament contracts and deforms the ileum, producing a kink or obstruction of this portion of the intestines, especially in the erect posture of the trunk. In consequence of this kink the small intestine becomes very much dilated and this dilatation may extend up as far as the pylorus. 4. Strong bands of peritoneal adhesions develop between the outer aspect of the cecum and ascending colon and adjacent abdominal wall, with the object of holding up the cecum, which in the erect posture becomes overloaded with fluid contents. 5. Both the hepatic and splenic flexures are drawn upward, reducing the lumen of the bowel at these points and rendering the passage of feces difficult. In consequence, abrasion, ulceration and cancerous and other infections are common in these situations. 6. The kinking at these points is much exaggerated by the fall of the transverse colon. The weight of the loaded transverse colon is distributed, partly through the ligaments of these kinks and partly through the convexity of the stomach and through the newly developed ligament of the pylorus. 7. Nature attempts to keep the sigmoid loop filled with solid feces out of the true pelvis by the formation of bands on the outer surface of the mesosigmoid. These by their contraction convert the mobile loop into a straight fixed tube. The lumen of this tube is subnormal and its muscular coat is wasted because of its fixation. 8. The left ovary is fre-

* Abstract of a paper read (by invitation) before the Chicago Medical Society, Oct. 5, 1910.

quently involved in the adhesions which bind down the lower portion of the sigmoid and the upper part of the rectum. The ovary becomes cystic in consequence of its fixation in the newly developed bands, later forming a tumor which for a time performs some of the functions so usefully performed by the pregnant uterus of raising the fallen viscera and overcoming obstructions. 9. The condition of the rectum varies very greatly. While in some cases the rectum is short and dilated, in others it is enormously elongated so that it puddles as a long loose tube in the true pelvis. 10. Associated with intestinal stasis, there is a considerable ascent in the level of deleterious organisms in the small intestine, with occasional infections of the biliary and pancreatic duct, producing gall-stones, pancreatitis and later cancer of these several structures.

Constipation is chiefly associated with stasis in the large bowel and is more marked the lower the area of stasis. In some localities the stasis may result in diarrhea, or constipation may be replaced by periods of diarrhea. Definite infections by various micro-organisms may result in inflammation of the intestines of an acute or chronic character.

No class of cases calls for sympathy more than do these poor miserable toxic men and women. They usually pass through many hands, are called neurasthenics, they are always wretched and hopeless, since they are not only frequently unable to do any mental or physical work, but they are quite unable to live a normal existence. Many of the patients whom I have short-circuited, or whose large bowel I have removed, have been so weakened that they have spent months in bed. One woman had to take six drops of croton oil twice a week for months. This assisted by enemata managed to produce an evacuation by a process which was painful and uncomfortable in the extreme. Since she has been short-circuited, she has had a daily evacuation and is comfortable. I know of no operation in surgery which produces such a change as does this one of colon exclusion. The relief which is afforded by operation is out of all proportion to the risk incurred; not that these cases take the risk of death into consideration, as life presents no attraction to them. The risk is ridiculously small, considering the miserable physical and mental condition of the sufferer.

DISCUSSION

DR. A. J. OCHSNER: Mr. President and Members: Several years ago, when Mr. Lane first discussed this subject, it seemed almost beyond discussion. Then, when he came to this country and presented the subject in the forcible and impressive way that he has presented it to-night, and later on, when I had an opportunity of discussing it with him personally, it seemed to me as though he had brought to us a thought which was well worth considering. Following this visit, he made a second visit, and I was personally more forcibly impressed with the fact that the subject was well worthy of our attention. In every case in which these various symptoms were present, to which Mr. Lane has alluded, and in which I had an opportunity to open the abdomen for other cause or causes, probably in many of the cases I should have opened the abdomen for this specific cause, for the reason it is quite possible that many of the patients who were operated upon for the relief of gall-stones, and for the relief of pyloric obstruction, should have been operated upon for the relief of the condition he has mentioned, and if this had been done the ultimate results might have been better. At the present time, I recall a number of cases on which I operated for the relief of cholecystitis, those in which the gall-bladder was full of black, sandy infected bile, and it seems to me as though, in many of these cases, the operation probably did not do as much good as a short circuiting of the bowel would have done, because, in a recent investigation of all my gall-bladder operations, I find that it is just this particular class of cases of gall-bladder surgery that were not definitely and permanently benefited. In a large number of cases, I have found the anatomical conditions which Mr. Lane has described. In only five cases since his second visit to this country have I performed the operation. I will speak of the results of these operations later, when I have operated on a

sufficient number of them to be entitled to an opinion. But I will say this, that many of my friends who have seen Mr. Lane's cases, have convinced me that whenever we shall have arrived at a point by which we will be able to recognize the cases suitable for this operation, then we will begin to benefit a very large number of patients by performing it. Later on, we will do as we have done in appendicitis and with salpingitis, and all such pathologic conditions, we will perform this operation for strabismus and for other conditions that have absolutely nothing to do with it. But that should not be placed to the discredit of a condition which actually exists, and which can be relieved. The mechanical relief afforded to patients by this operation is new. Our ideas of constipation have been as broad and as manifold as can be imagined, but the specific placing of this condition anatomically, as Mr. Lane has placed it, is undoubtedly new, and the definite method of relief is new, and I am sure the time will come when we will have the courage as surgeons to relieve those patients whom we know are suffering from this specific condition, and to relieve them in a manner in which he has described to us. At the present time, I confess that every now and then, if I had more courage, I would perform the operation oftener. I have performed it oftener this year than in the previous two years, but I am sure not as often as it should be performed.

I think we are to be congratulated on having had Mr. Lane here to read this very valuable paper.

DR. FRANKLIN H. MARTIN: I would like to ask Mr. Lane, in closing the discussion, to state in a few words the operation he has referred to, that is, indicate this short circuiting operation on the bowel. A great many of us probably understand it clearly, but others do not understand it, and possibly it would be well if he were to make a drawing on the blackboard, or indicate by words this operation which would enlighten us on that point.

DR. ARTHUR DEAN BEVAN: I am sure that you have all been delighted, as I have been, with the interesting and original ideas presented by Mr. Lane. I have fortunately had the opportunity of seeing Mr. Lane operate and remove the colon on two different occasions, and I must say that if I were to have my colon removed, I should select Mr. Lane to remove it, but I am going to hold on to my colon for a time yet. I am one of those who is not fully convinced by Mr. Lane's arguments. I think his ideas are very original. They have been very well thought out, and he has a definite basis for the operation; at the same time, it does not appeal to me. Personally, I should as yet limit such an operation as the short circuiting and removal of the colon to conditions where there was absolute obstruction, and where we clinically or anatomically at the time of the exploratory operation can demonstrate absolute obstruction. I want to say, however, that I am very much interested in the subject. Mr. Lane will carry on his work, and truth will always prevail, and if he is right time will demonstrate that his work and the work of his followers are based on facts.

DR. W. R. CUBBINS: I feel highly honored in being asked to discuss the paper of Mr. Lane, a man who is so eminent in surgical work. When we know that Metchnikoff has sent his assistants to study and observe the work carried on by Mr. Lane, it is worthy of our serious consideration. But I do not believe that his work has been appreciated to the extent that he believes intestinal intoxication to be a causative factor in the production of different abdominal diseases. So far as I can learn from Mr. Lane, he believes it is a direct causative factor of gastric ulcer, of duodenal ulcer, and of gall-stones in a large percentage of cases. That this is not without foundation has been proved by bacteriologic researches, as witnessed by the work of Dr. Turek of this city, which is undoubtedly epoch making, whether we wish to recognize it in Chicago or not.

The next point is that the work of Metchnikoff has proceeded along a different line; taking the gas-producing bacillus and the non-aerobe, he has failed to

produce ulcer in this manner, while this bacterium, as used by Dr. Turck, has produced it.

Mr. Lane in speaking of the changes that result in female breasts, shows that the lobulations that occur in the upper and outer quadrant, particularly of the left breast, secondarily in the right breast, are distinctly pre-cancerous. It seems almost as if we were treading on dangerous ground to get upon anything of that type, and yet at the same time it is something of which he is convinced. That brings us to the proposition of cancer as an infection being carried in a hematogenous manner. The next thing which he brought out in his paper is that we find intestinal intoxication, not only in people who are constipated, but it may be found in people who have a daily evacuation. That brings more strongly to my mind the researches of Dr. Turck and of Metchnikoff, to the effect that the specific bacillus may be an inhabitant of the colon, and that its toxic products are directly responsible for the production of an ulcer and of changes which occur in the gall-bladder, and which to-day are not satisfactorily explained by any mode which we can assume.

DR. FENTON B. TURCK: I think we are to be more than congratulated on this intellectual baptism to-night, for the reason that we have had geniuses from abroad brought here to inspire us and to instruct us, to arouse the lethargy of those who only practice medicine and never dream that in that practice there is science in every movement which they make. We have heard the bacteriologic studies first presented by this eminent experimental observer, Mr. Lane, of England, Guy's Hospital, and if you were to see his work there, and the magnificent enthusiasm with which he goes into it, I am sure it would call for your admiration. We should remember that geniuses of this type must be enthusiastic or we will not progress. The bacteriologic work he mentioned was instigated by Pasteur's work.

We have also had to-night a remarkable contribution from Dr. Wickham, of Paris, on radium therapy. Radium has revolutionized the world in physics and our ideas in the cosmos of matter, and here comes a savant, a genius, who presents results that are marvelous in the cases he has treated with radium. These contributions and results should be inspiring to every one of us. And I want to say in reference to Mr. Lane's interesting work from a scientific point of view, that we owe a great deal to surgery. It is through surgery that we learn bacteriology of appendicitis, relating to the colon bacillus. It was through surgery that we learned the bacteriology of cholangitis, and it was through surgery that every advancement has been made in internal medicine, and I am sure we owe a debt of gratitude to Mr. Lane for what he has done in this particular field of activity, and for what we understand about the gastro-intestinal flora and its effect upon the micro-organisms. I simply wish to express a feeling of gratitude to Mr. Lane for what he has done, and also to present this one thought, that we must accept these things and act upon them and utilize them in our daily work. We are not mere artisans, but we are scientific men, and we need only to be aroused to see what can be accomplished, and each one should do his share in research work. The clinician and laboratory worker must combine their energies. They must work together. There is no such thing as divorcing laboratory work from clinical work. It is all scientific now. There was a time when the laboratory was separated from clinical work, but that day has passed. The clinician is a scientific man and should use every opportunity of acquiring knowledge in which the laboratory worker plays a prominent rôle.

MR. LANE (closing the discussion): If I have one cause for congratulating myself more than another, it is on the interest that Dr. Ochsner has taken in regard to the subject of intestinal stasis. It would be an insult on my part to praise him before the audience that is present, so I will not pretend to do so, but will leave the subject in his hands with the utmost confidence.

Dr. Martin asked about the method of operating. The method of operating is simple. If there is a large quantity of intoxication and little pain, I cut out the ileum and establish a communication between it and the rectum. If there is

much pain, I may be obliged to connect the ileum with the sigmoid, and in these cases I remove the big bowel.

With reference to the remarks of Dr. Bevan, I will say that there is no likelihood of one having the opportunity of removing his large bowel, because I think it is too happily placed. (Laughter.)

COLES COUNTY

The Coles County Medical Society met Tuesday, Oct. 4, 1910, at the Public Library, Mattoon, Ill. The following is the program: "Typhoid Fever," Dr. F. P. Beck; discussion, Drs. Bell and Bennett. "Summer Diarrhea in Children," Dr. Nolan; discussion, Drs. Houghton, Strickler and Zepin. "Constipation," Dr. Kleckner; discussion, Drs. Ed. Summers, Ferguson and Freeman. "Trip East," Dr. Iknayan. Report of Legislative Committee.

GREENE COUNTY

The regular meeting of the Greene County Medical Society was held at Greenfield, Friday, Sept. 9, 1910. Members present: Drs. Howard Burns, Carrollton; F. A. Clement, C. O. Bulger, H. W. Gobble and J. A. Cravens, Greenfield; H. W. Chapman, A. W. Foreman, G. W. Burns, W. C. Day, F. N. McLaren and H. A. Chapin, White Hall.

Dr. Bulger of Greenfield was elected to membership. A communication from the Legislative Committee of the Illinois State Medical Society and the Public Relations Committee of the Chicago Medical Society was read and discussed, it being the desire of the members of the society that all applicants for license to practice medicine in this state should submit to the same examination, except in the matter of therapeutics, it being a matter of protection to the general public.

The following resolution was unanimously adopted:

Resolved, By the Greene County Medical Society that we instruct our member of the Legislative Committee to immediately ask each of our candidates for the legislature to pledge himself that if elected he will do his utmost to maintain one standard for all practitioners of medicine and will use his influence to defeat any legislation the object of which is to permit any cult to practice medicine at a standard of medical education lower than those already in the field under the pretext that its followers are not practicing medicine. He will at all times support medical legislation which is in the interest of the people of the state and not for the interest of any special cult or school of practice. He will vote to retain in Illinois a one-board supervision over all medical matters, including the examination of candidates for practice. That the examination be for all alike, whether they belong to the now recognized schools of medicine or have tacked to their names some "path," "cult" or "ism." He will use his best efforts to help amend the medical practice act so as to give the State Board of Health supervision over all medical licenses issued by the state of Illinois.

The next meeting will be held at Roodhouse Friday, Dec. 9, 1910, with the following essayists: H. L. Hensler, C. B. Foreman, C. O. Bulger, H. W. Gobble and E. H. Higbee.

H. A. CHAPIN, Secretary.

GRUNDY COUNTY

The meeting of the Grundy County Medical Society Oct. 4, 1910, was the occasion of a banquet given by the trustees of the new hospital at Morris to the physicians of the county. The trustees, D. A. Mathews, T. H. Hall, James Hansen, L. S. Hoge and Eugene Cryder, who have assumed an indebtedness of \$20,000 on the new building, received the guests. Mrs. Mathews was chairman

of the banquet committee and the nurses, Misses Ellen Ulrich, Clara Wicks, Lena Howe, Gertrude Gjerde, Margaret Breit, Lena Towsley and Bertha Hulderson, served. Dr. H. M. Ferguson acted as master of ceremonies and Dr. F. A. Palmer, president of the society, introduced the speaker of the evening, Dr. Hugh T. Patrick of Chicago. The address of the evening on "The Diagnosis of Organic and Functional Diseases of the Nervous System," was illustrated by blackboard drawings and by demonstrations on "subjects" among the physicians present.

Dr. Patrick, the trustees and the nurses received the thanks of the society. The following physicians were present: Hugh T. Patrick, Chicago; George F. Woodruff, Philip Le Sage, H. W. Woodruff, W. B. Stewart, of Joliet; G. G. Wilcox, J. H. Landgraf, of Seneca; M. E. Blanchard, W. S. Sterrett, A. L. Stebbings, of Marseilles; E. W. Weis, W. A. Pike, of Ottawa; E. G. Fuller, of Gardner; W. H. Curtis, of Wilmington; C. D. Allison, Joseph S. Ferrando, of South Wilmington; A. Stockdale, D. S. Cronley, of Coal City; H. B. Gilborne, of Mazon; George W. Dieus, D. S. Conley, of Streator; A. E. Palmer, M. C. Sturtevant; W. E. Walsh, F. A. Palmer, H. M. Ferguson, F. C. Bowker, Roscoe Whitman, F. F. Gano, G. A. Leach, W. G. Sachse and B. F. Hodson, of Morris.

H. M. FERGUSON, Secretary.

JACKSON COUNTY

The October meeting of the Jackson County Medical Society was held in the East Room of the Methodist Church, in Carbondale, Thursday, Oct. 20, 1910, at 1 p. m.

Present.—Drs. Carter, Ormsby, Molz, Wayman, Horstman, Sabine and Essick of Murphysboro; Drs. Mitchell, Neber, McAnally, Barrow, Whitacre, Keesee, Etherton and Thompson of Carbondale; Dr. Tweedy of Vergennes. Visitors.—Dr. Lightfoot, Carbondale; Dr. O. House, DeSoto; Rev. J. G. Tucker, Carbondale.

Business.—Moved by McAnally, seconded by Etherton, that the secretary be instructed to each month mail programme of the coming meeting to every physician in the county. Amended by Horstman, that this be done with all except those physicians who had been refused membership in this society and whose practices were irregular; seconded by McAnally. Carried.

Program.—Paper: "The Physician: His Duties in Relation to His Profession and to the Public," Dr. H. C. Mitchell. A very commendable paper, setting forth the values of a physician morally and as a good Samaritan, rather than a gatherer of worldly goods. In this Dr. Mitchell frequently called our attention to the many physicians who had sacrificed their lives for science. Comments, Drs. Keesee, McAnally, Rev. Tucker. "Report of a Case of Spleno-Myelogenous Leukemia, with Presentation of Blood Specimen," Dr. J. C. Barrow. Very interesting and well presented. Discussion, Drs. Mitchell, Molz, Keesee. "Presentation of a Neurological Case for Diagnosis," Dr. A. R. Carter. "Examination of Patient," Dr. Molz. Discussion, Drs. Mitchell, Etherton, Barrow, Ormsby, Tweedy. "Report of Two Cases of Traumatic Rupture of Urethra," Dr. O. B. Ormsby. Moved by Etherton, seconded by Barrow, that November meeting be held in Murphysboro, the third Thursday in November. Carried. Adjourned.

RAY B. ESSICK, Secretary-Treasurer.

MADISON COUNTY

The meeting of our society, held at Edwardsville September 2, was a rouser with thirty-three members in attendance. The president's annual address on the subject "The Financial Liability of the General Practitioner in Fracture Cases" was very interesting and instructive, and the discussion which followed was full of practical points, which will prove of great benefit to all who were present. Dr. C. M. Riley of Alton and Dr. Hugo C. H. Schroeder and Christo Theodoroff of Granite City were elected to membership. The society is growing

in numbers and interest and the time is soon coming when no practitioner in the county can afford not to belong to the society and not to attend all of its meetings.

MONTGOMERY COUNTY

The Montgomery County Medical Society held a banquet October 13 at the Litchfield Hotel, Litchfield, Ill. A number of eminent physicians from different parts of the state were present. Dr. Fiegenbaum of Edwardsville, who is secretary of the Madison County association, read a paper on "Organization." All the members present engaged in the discussion. Captain M. A. Reasoner of the Medical Corps, United States Army, who is visiting in this city, discussed the subject of "The Wassermann Reaction." The following physicians were present at the banquet: Z. W. Kimball, G. A. Clotfelter, W. W. Douglas, H. A. Seymour, L. S. Brown, of Hillsboro; J. D. Colt, J. F. Blackwelder, P. M. Kelly, V. A. Carriere, H. F. Bennett, L. G. Allen, M. W. Snell, C. G. Buffingham, C. W. Grafton, of Litchfield; Dr. Fiegenbaum of Edwardsville, Captain M. A. Reasoner of the United States Medical Corps.

MORGAN COUNTY

The Morgan County Medical Society held its first regular meeting following the summer vacation, Thursday, Sept. 10, 1910, at the Public Library in Jacksonville, with the following physicians in attendance: Drs. Adams, Bartlett, Black, Bowe, Crouch, Ulysses Day, Dewey, Gailey, Gregory, Milligan, Norris, Ogram, Reid, and Stacy and Webster of Murrayville. Dr. James A. Logan of Murrayville was present as a visitor and was proposed for membership. Dr. Grace Dewey presided.

Dr. Carl E. Black reported a case of Cesarean Section with successful results in a woman who had had thirteen pregnancies, with eight children coming to term, but none surviving. Dr. Edward Bowe reported a case of "Angio-Neurotic Edema." Dr. F. A. Norris read a paper on the "Present Status of Vaccine and Serum Therapy." In his résumé of this form of treatment, he considered the successes and failures, and succeeded in bringing forth a general and interesting discussion which was opened by Dr. David Reid. The Legislative Committee of the Society reported that Messrs. Lyon, Merritt, Hay, Ishmael, Belle and Morris, candidates for nomination for the next assembly, were in line with the campaign of the State Medical Society for better administration of medical and health matters of Illinois. After reports of certain standing committees and transaction of routine business, the society adjourned.

GEORGE STACY, Secretary.

Regular Meeting, Oct. 13, 1910.

The Morgan County Medical Society met at the Public Library at Jacksonville, Oct. 13, 1910, with the president, Dr. Grace Dewey, in the chair. Physicians present: Drs. Baxter, Black, G. R. Bradley, Campbell, Cole, Crouh, Dewey, Duncan, Gregory, Ogram, Stacy and Woltman.

Following further "The Treatment of Infection," as begun at the last meeting, papers were read by Drs. Woltman and Duncan upon the "Medical and Surgical Treatment" of this condition.

Dr. Woltman said that the medical treatment of infection covers almost the entire field of acute and chronic diseases. This form of treatment in infectious diseases of unknown etiology, is largely empirical or experimental. The etiology once known, empirical treatment often becomes useless and drug administration unscientific, consequently fewer drugs are being used now than formerly.

Exact determination of etiology is also serving to break down the barriers between the different schools of medical practice, and is placing drugs in their

proper places as regards the treatment of disease, namely, to meet the various symptoms, for with few exceptions, drugs do not remove the cause. The evolution of Ehrlich's "606" treatment for syphilis was referred to.

After all has been said and done in treatment of disease, the greatest factor is the individual body resistance. The various symptoms of a fever, for instance, are but efforts on the part of the organism to combat the infection. The administration of drugs should always have as its object the aiding of the individual in his effort to neutralize the toxins of infection, and should be to support nutrition, promote elimination, to stimulate and to secure freedom from pain and the avoidance of shock.

A good motto to keep before us in treating infections is, "Remember the Pathology." If a definite picture of the lesion is in one's mind, it is easy to realize how useless much of the medication as generally given is.

Dr. Duncan emphasized the importance of avoiding infection in surgery by the proper preparation of the field of operation, surgical armamentaria and the surgeon himself, for this does away with infection in aseptic fields and with mixed infection. In septic cases the general rule to give early free drainage should be followed. Irrigation with strong chemicals should be condemned, for cells weak from toxins cannot survive in the struggle if more toxins are brought in contact with them.

Discussion of the papers of Drs. Woltman and Duncan was lead by Drs. Cole and Black, and was participated in by all present, after which the society adjourned.

The next meeting will be November 10, at which Dr. Frank P. Norbury will read a paper on the "Psycho-Neuroses, Their Present Status and Methods of Treatment."

GEORGE STACY, Secretary.

PERRY COUNTY

The Perry County Medical Society met in regular session at Pinekneyville with Dr. J. S. Cleland, Swanwic, president in the chair, and Drs. G. F. and D. O. Mead, W. L. McCandless and J. S. Templeton, of Pinekneyville; T. A. Holeman of Rice, C. O. Church of Tamaroa and F. P. Gillis of Duquoin, present. Dr. McCandless reported a case of typhoid fever with unusual temperature, which was discussed in a very spirited and interesting manner by all members present. Dr. G. F. Mead reported a case of appendicitis operated on and growth of hard tumor in lower angle of cicatrix.

Dr. Gillis reported a case of appendicitis operated on in which there was no appendix present. The question of medical legislation was discussed and Drs. McCandless and Templeton were appointed a committee to wait on candidates and secure pledges of assistance in securing just legislation at coming session of that body. Dr. J. S. Templeton of Pinekneyville was elected member of the legislative committee.

Dr. O. C. Church of Tamaroa reported a case of chronic stomach trouble, which was freely discussed by the members. Exophthalmic goiter was selected as the subject for discussion at next meeting, after which the society adjourned to meet at Du Quoin, November 10.

F. P. GILLIS, Secretary.

ROCK ISLAND COUNTY

The annual summer meeting of the Rock Island County Medical Society was held at Watch Tower Inn, Tuesday evening, August 9, 1910. In the absence of President Bennett, the vice-president, Dr. W. L. Eddy, presided. Minutes of the April meeting and the druggists'-physicians' harmony banquet report were read and approved. The secretary read communications received from Senators Wm. Lorimer and Shelby M. Cullom and Representative James McKinney relative to the society's endorsement of the proposed national department of health

and Senator Owens' bill, No. 6,049. A letter from Dr. H. N. Moyer, chairman of the Medico-Legal Committee, was read, explaining the plan of procedure this committee used in malpractice suits. The secretary also made a verbal report of Dr. Moyer's annual report at the Danville meeting. A communication from C. B. Brumstrom, secretary of the Rock Island County Retail Druggists' Association asked for the society's endorsement of Dr. H. B. Hemenway of Evanston for a position on the state board of health in case of a vacancy. On motion of Dr. Hollowbush the communication was ordered received and placed on file. Dr. W. H. Ludewig, delegate to the state society's meeting at Danville, presented his report. He spoke of the delay and confusion at the convening of the House of Delegates due to the lack of proper presentation of credentials. Dr. Ludewig advocated the meeting of the credential committee several days in advance of the regular meeting, so as to perfect the organization of the House of Delegates. The proper delegates could then be seated on convening and the business of the society be facilitated. As it is now the delay often extends over three days, greatly hindering the expediting of business. Applications for membership were read from Dr. E. G. Norman and Dr. J. W. Seids of Moline. The president appointed Drs. Gardner, Leipold and Hollowbush as a committee on Dr. Norman's application and Drs. Chapman Ludewig and Williams for Dr. Seids. A statement from Gus Lindvall, treasurer of the Rock Island County Retail Druggists' Association, showed that the society owed \$65.12, same being the society's share of the druggists'-physicians' harmony banquet expense, as previously agreed on. This sum had been paid by Dr. Leipold and was then formally allowed. The bills also were allowed from the New Harper Hotel Company and Driffel Printing Company. The secretary reported the treasury to be depleted and on motion properly seconded and carried a special assessment of \$1 was ordered. Dr. Hollowbush then spoke of the coming primary election of candidates to the state legislature and the advisability of the society taking an interest in politics to help secure proper medical legislation. He made a motion that the secretary request Messrs. Landee, Abbey, Campbell, Wheelan, Clark and other candidates to appear before a meeting of the physicians and druggists of this county to ascertain the candidates' position relative to future medical legislation. This was amended by Dr. Ludewig to read that the president appoint a committee to arrange with the Rock Island County Retail Druggists' Association for a joint meeting. The president appointed on that committee Drs. Hollowbush, Snively and Lamping. Dr. Williams spoke of the revival of the Illinois State Association for the Prevention of Tuberculosis and it was decided to have the president appoint a committee with power to act and arrange for the establishment of a local county branch organization. Dr. Ostrom reported that the Augustana College authorities were willing to allow space in the new Denkmann Memorial Library building for the society's medical library, also a hall for meetings. A vote of thanks was given to Augustana College and the secretary was ordered to communicate such to President Andreen. After dining the following papers were read on Hay Fever: "Etiology, Pathology and Symptoms," Dr. B. M. Rinehart of Moline. "Treatment," Dr. L. Ostrom of Rock Island. The subjects were very interesting and opportune. After discussion by several members the meeting adjourned. Members present: Drs. Ostrom, Wiggins, Souders, Ludewig, Love, Chapman, Wright, Craig, Jr., Rinehart, Leipold, Jones, Williams, A. J. Miller, Eddy, Snively, Hollowbush, Martin, Lamping and A. N. Mueller. Visitor, Dr. E. G. Norman of Moline.

ALBERT N. MUELLER, Secy.

TAZEWELL COUNTY

The Tazewell County Medical Society met at Minier, Ill., Tuesday, Oct. 11, 1910, at 2 p. m. The following is the program: "Suppurative Diseases of the Ear," Dr. McIntire, Tremont; "A Case of Tabes," Dr. Kilby Mackinaw; "Fractures," Dr. Miller, Peoria.

NEWS OF THE STATE

PERSONAL

Dr. and Mrs. Harry Whitten, Peoria, left for Europe October 14.

Dr. Sidney G. Pratt, Buda, who has been ill for a year, has recovered and resumed practice.

Dr. and Mrs. Daniel B. Bobb, Dakota, celebrated their golden wedding anniversary, October 7.

Dr. Elijah S. Smith has succeeded Dr. William F. Burres, Urbana, as physician of Champaign County.

Dr. and Mrs. Arthur Paul Wakefield, Springfield, have started for their post of duty at Chao-Hsien, China.

Dr. Walter G. Bain has been elected director of the pathologic laboratory of St. Johns Hospital, Springfield.

Dr. Karl F. Snyder, Freeport, suffered a compound fracture of the right arm while cranking his automobile, October 1.

Dr. Robert S. Denney has been appointed local surgeon of the Burlington System at Aurora, vice Dr. Augustus R. Reder.

Dr. and Mrs. Samuel J. Walker and family and Dr. and Mrs. Corey H. McKenna, Chicago, have returned from Europe.

Dr. and Mrs. Joseph Zeisler and daughter, and Dr. and Mrs. Cassius C. Rogers, Chicago, have returned from Europe.

Dr. Joseph DeSilva, Rock Island, has been elected secretary of the National Association of Penal and Reformatory Institutions.

Dr. Hiram T. Hardy, Kaneville, who was operated upon in Chicago recently for the removal of gall-stones, has recovered and returned home.

Dr. Annie B. M. Alguire, Belvidere, who was operated on at the Presbyterian Hospital, Chicago, September 3, is reported to be doing well.

Dr. Chas. F. Smith, Kankakee, was appointed president of the Big Four Railway Surgeons' Association, at its meeting held in Indianapolis October 4.

Dr. B. C. Corbus, Chicago, has returned from Europe, where he went to investigate Ehrlich's new specific for syphilis. He brought back a quantity of the substance.

Dr. C. M. Calvert, South Bend, Indiana, who has been on the medical staff of Ottawa Tent Colony during the past year, has been promoted to assistant medical director.

Dr. William Lorenz, formerly a member of the staff of the Kankakee State Hospital, has been made assistant medical superintendent of the Wisconsin State Hospital.

Dr. John S. Marshall, chief of the dental service of the United States Army, who has been in Manila for three years, is visiting in Chicago, en route to Columbus Barracks, his new station.

Dr. Ralph E. Niedringhaus, Granite City, a member of the State Board of Health, was seriously injured in Granite City September 28, in a collision between his buggy and an ambulance.

Dr. Alexander H. Ferguson announces that he has sold his equity in the Chicago Hospital and henceforth will do his surgical work at St. Luke's Hospital on Tuesdays and Thursdays at 2 p. m.

Drs. Alfred A. Knapp and Charles G. Farnum, Brimfield, Dr. and Mrs. William D. Hohman, Kewanee, Dr. Thomas W. Curry, Streator and Dr. and Mrs. George S. Isham, Dr. Joseph B. DeLee and Dr. and Thomas D. Palmer, Chicago, have returned from Europe.

Dr. Janet Gunn has been elected president of the board of managers of the Mary Thompson Hospital, vice Mrs. Chas. Fitz Simons, who has been a member of the board for thirty years, but recently resigned on account of illness and who has been made president emeritus.

The damage suit instituted by Dr. Jesse Bulkley Ogden, Waukegan, against the *Waukegan Gazette*, for damages arising from a criminal action inaugurated by the state against Dr. Ogden, following the death of a patient, is said to have been taken from the docket by her attorney, October 5.

NEWS

—In the case of Dr. Thomas D. Doan, Scottville, charged with an attempt to produce abortion, the jury returned a verdict of not guilty.

—The Rockford School Board is to inaugurate medical inspection at once. A Chicago trained nurse, Miss Brown, has been secured as nurse inspector.

—Macomb has taken up the subject of medical school inspection in a practical way and has divided the city into districts with a physician for each ward.

—The cornerstone of the new Deaconess Hospital, at Morgan Street and Fifty-fourth Place, Chicago, was laid with appropriate ceremonies, September 18.

—J. Gartenstein, an "herb doctor," is said to have been found guilty on September 27 of practicing medicine without a license and fined \$100 and costs.

—J. Kerasibowska, A. Nowagruska, Mrs. E. Bonanami and George Drews, Chicago, charged with practicing medicine without a license, are reported to have been fined \$100 each.

—A charity ball is to be given at the Blackstone Hotel, Chicago, October 31, under the auspices of the board of managers of the Mary Thompson Hospital, for the benefit of that institution.

—The trial of Dr. William Hecker, Watseka, at Portage, Wis., charged with being responsible for the drowning of his wife at Fox Lake, in August, was concluded, October 7, by the dismissal of the case.

—The Semrad Chemical Company and Allen B. Wrisley Company, charged with misbranding and adulterating flavoring extracts, are said to have been found guilty and fined \$200 each, in the United States District Court, September 23.

—Wreckers have commenced the demolition of the old building of the Presbyterian Hospital, Chicago, erected in 1883, which will be replaced

by a seven-story structure, provided for in the will of the late Thomas Murdock.

—It is said that a number of Chicago physicians holding stock in the Chicago Hospital are selling their interest because the hospital is now controlled by an Iowa medical company, which is about to turn it into a drink cure.

—Plans have been formulated by Dr. August H. Arp, health commissioner of Moline, for a new isolation hospital, to be built immediately in the rear of the Moline City Hospital. The building will be of brick and two stories in height.

—The Chicago Dermatological Society has adopted resolutions setting forth that in the death of Dr. James Nevins Hyde, the society has suffered an irreparable loss, the medical profession has lost a great teacher, and the community a model citizen.

—The DeKalb City Medical Society has selected property just south of the city limits for the Glidden Hospital, for which James F. Glidden left a bequest of \$25,000. The late Col. Isaac L. Elwood, DeKalb, in his will, made provisions for the payment of \$25,000 to the institution.

—The annual dinner and election of officers of the Scandinavian Medical Society of Chicago, was held October 13. Dr. Alfred C. Cotton, president of the Illinois State Medical Society, was guest of honor. Dr. Andreas Klövstad was elected president, and Dr. Wm. J. Anderson secretary-treasurer.

—The cornerstone of the Iroquois Memorial Emergency Hospital at 87 Lake Street, Chicago, was laid October 15, in the presence of more than one hundred relatives of the victims of the Iroquois Theatre calamity. Dr. Wm. A. Evans, health commissioner, received the hospital on behalf of the city.

—The Physicians' Club of Elgin, at its meeting October 3, discussed the "Medical and Surgical Treatment of Pleurisy" and Dr. T. E. Macauley gave an address on the "Medical Treatment" and Dr. O. L. Pelton, Sr., discussed the "Surgical Treatment." Dr. Wm. A. Evans, health commissioner of Chicago, has been invited to address the November meeting on "Public Hygiene."

—A clinical symposium is announced to be held in Chicago from November 7 to 19, consisting of clinics at various hospitals from 8 a. m., to 5 p. m., on each day. Headquarters for this clinic are to be maintained at the Hotel LaSalle, where visiting surgeons may register and receive cards of admission to clinics. Full particulars, programs, etc., may be obtained from Dr. Franklin H. Martin, 100 State Street, Chicago. Special society meetings will also be held during the clinical fortnight.

—The Medical Milk Commission of the Galesburg Medical Society had a discouraging time trying to raise the standard of milk furnished in that city until some one suggested using the facilities of the high school laboratory for making the usual tests for fats, solids, preservatives, specific gravity and the Wisconsin card test for purity. The subject of pure milk was thus brought directly into many homes and the producers and dealers

have been compelled to raise the grade of their product over 50 per cent. The inspector of high schools of the State University is said to recommend the plan to other high schools.

—The editors of *Surgery, Gynecology and Obstetrics* have extended to all physicians and surgeons of the United States, Canada and Mexico who are interested in clinical surgery, an invitation to visit the clinics of the leading surgeons of Chicago during the two weeks, November 7 to 19, 1910. The local medical and surgical societies have arranged meetings for six evenings during the two weeks and have prepared programs dealing with the practical live subjects in surgery. Visiting surgeons will be welcome. Headquarters for this meeting will be maintained at the Hotel LaSalle, Madison and LaSalle Streets, where visiting surgeons should register and receive cards for admission to clinics and society meetings. At these headquarters all clinics, special demonstrations and other features of interest will be bulletined daily twenty-four hours in advance. The following clinics and society meetings have been arranged for.

A Clinical Meeting of the Surgeons of North America Under the Auspices of Surgery, Gynecology and Obstetrics. Clinics November 7 to 19

CLINICS

A. J. OCHSNER—Augustana Hospital—Monday, Wednesday and Friday, 7:30 to 12.
 J. B. MURPHY—Mercy Hospital—Monday, 10 to 12; Wednesday, 9 to 1; Thursday, 10 to 12; Saturday, 9 to 1.
 ARTHUR DEAN BEVAN—Rush Medical College—Monday and Thursday, 11 to 1.
 CHARLES E. KAHLKE—Hahnemann Medical College—Thursday, 9:30 to 11:30.
 HENRY T. BYFORD—College of Physicians and Surgeons—Thursday, 3 to 5.
 E. WYLLYS ANDREWS—Michael Reese Hospital—Monday and Thursday, 11 to 1. Mercy Hospital—Tuesday and Friday, 8 to 10.
 D. W. GRAHAM—Rush Medical College—Saturday, 2.
 E. C. DUDLEY—To be announced.
 L. L. MCARTHUR—Michael Reese Hospital—Tuesday, 9 to 11.
 M. L. HARRIS—Polielinic—Monday and Thursday, 11 to 1. Alexian Brothers Hospital—daily, 7:30.
 ALBERT E. HALSTEAD—St. Luke's Hospital—Thursday, 8 to 10. County Hospital—Friday, 10 to 12.
 H. R. CHISLETT—Hahnemann Medical College—Saturday, 8:30 to 10:30.
 J. CLARENCE WEBSTER—To be announced.

JOHN RIDLON—Home for Destitute Crippled Children—Sunday, 9 to 12. Rush Medical College—Tuesday, 11 to 1.
 JOHN E. OWENS—St. Luke's Hospital—Monday, 2.
 ALEX. H. FERGUSON—St. Luke's Hospital—Tuesday, 2. College of Physicians and Surgeons—Friday, 1 to 3.
 D. A. K. STEELE—University Hospital—Thursday, 1 to 3.
 LOUIS E. SCHMIDT—Alexian Brothers Hospital—daily, 8 to 10.
 JOSEPH B. DE LEE—Demonstrations to be bulletined.
 W. A. PUSEY—Cook County Hospital—Monday, 2 to 3.
 C. S. BACON—University Hospital—Tuesday, 11 to 12 (ward walk).
 S. C. PLUMMER—St. Luke's Hospital—Wednesday, 2 to 4.
 JOHN L. PORTER—College of Physicians and Surgeons—Tuesday, 10 to 12. Home for Destitute Crippled Children—Wednesday, 11 to 12. County Hospital—Thursday, 9 to 10.
 T. J. WATKINS—Wesley Hospital—Wednesday and Thursday, 8 to 10.
 CHARLES E. PADDOCK—Demonstrations to be bulletined.
 WILLIAM HESSERT—Polielinic—Tuesday and Friday, 11 to 12. Alexian Brothers Hospital—Saturday, 2:30 to 4 (fracture clinic).
 CARL BECK—County Hospital—Saturday, 10 to 12.

- CARL AND EMIL BECK—North Chicago Hospital—Wednesday, 10 to 12.
- ALBERT GOLDSPOHN—Post Graduate Hospital—Tuesday and Friday, 11 to 12.
- W. E. SCHROEDER—County Hospital—Friday, 2 to 4. Wesley Hospital—Saturday, 9 to 12.
- H. L. KRETSCHMER—Alexian Brothers Hospital—daily, 8 to 10.
- FRANK T. ANDREWS—Mercy Hospital—Thursday, 8 to 10.
- E. W. RYERSON—County Hospital—Monday, 3 to 4:30. Home for Destitute Crippled Children—Tuesday, 1 to 3. Children's Memorial Hospital—Wednesday, 3 to 6. Polyclinic—Friday, 1 to 3.
- JACOB FRANK—Columbus Hospital—Monday and Friday, 8 to 10.
- FRANKLIN H. MARTIN—Post Graduate Hospital—Monday, 2 to 4.
- CHARLES B. REED—Demonstrations to be bulletined.
- J. R. PENNINGTON—Polyclinic—Tuesday and Thursday, 2 to 4.
- W. E. MORGAN—Mercy Hospital—Tuesday, Thursday and Saturday, 9 to 1.
- W. L. BAUM—Post Graduate Hospital—Tuesday, Thursday and Saturday, 2 to 3.
- EMIL RIES—Post Graduate Hospital—Monday and Friday, 9.
- G. FRANK LYDSTON—To be announced.
- W. T. BELFIELD—Rush Medical College—Monday and Friday, 4.
- FRANK W. LYNCH—Demonstrations to be bulletined.
- ROBERT GILLMORE—Wesley Hospital—Monday, Nov. 14, 3 to 4.
- F. A. BESLEY—Wesley Hospital—Tuesday, 4 to 6. County Hospital—Friday, 10 to 12.
- DEAN LEWIS—Rush Medical College—Friday, 11. Other demonstrations as bulletined.
- JUNIUS C. HOAG—Demonstrations to be bulletined.
- DANIEL EISENDRATH—Michael Reese Hospital—Tuesday and Friday, 9 to 11. County Hospital—Thursday, 1.
- CHARLES DAVISON—County Hospital—Monday, 9 to 10. University Hospital—Tuesday, 1 to 3.
- HENRY BANGA—Michael Reese Hospital—Tuesday and Friday, 8 to 10.
- H. M. RICHTER—Wesley Hospital—Thursday, 4 to 6.
- ALLEN B. KANAVEL—Post Graduate Hospital—Thursday, 10 to 12.
- WILLIAM M. HARSHA—College of Physicians and Surgeons—Wednesday, 1 to 3.
- C. W. BARRETT—Polyclinic—Tuesday and Friday, 10 to 11. College of Physicians and Surgeons—Thursday, 3 to 5.
- RUDOLPH W. HOLMES—Demonstrations to be bulletined.
- WILLIAM R. CUBBINS—Post Graduate Hospital—Tuesday, 2 to 4.
- WILLIAM FULLER—College of Physicians and Surgeons—Wednesday, 2 to 3.
- WALTER S. BARNES—Mercy Hospital—Wednesday, 7 to 10.
- T. A. DAVIS—College of Physicians and Surgeons—Monday, 1 to 3. County Hospital—Thursday, 10 to 12. West Side Hospital—Wednesday and Saturday, 11 to 12.
- W. H. ALLPORT—St. Luke's Hospital, 3. Alexian Brothers Hospital, 10. Days to be announced.
- F. G. DYAS—College of Physicians and Surgeons—Saturday, 1 to 3.
- NORMAN KERR—Polyclinic—Monday, 11 to 12.
- A. BELCHAM KEYES—Polyclinic—Tuesday and Friday, 3 to 4. County Hospital—Thursday, 3 to 4.
- CHARLES J. ROWAN—County Hospital—Tuesday, 7 to 9 p. m.
- LAWRENCE RYAN—County Hospital—Tuesday, 11 to 1.
- GEORGE M. THOMPSON—Operations to be bulletined.
- C. M. FOX—Post Graduate Hospital—Saturday, 2 to 4.
- WILLIAM CUTHBERTSON—St. Luke's Hospital—Tuesday, 10 to 12.
- CAREY CULBERTSON—Demonstrations to be announced.
- HENRY F. LEWIS—County Hospital—Wednesday, 3:30.
- A. P. HEINECK—Operations to be bulletined.
- E. C. RIEBEL—People's Hospital—Thursday, 2 to 4.
- THOMAS J. SULLIVAN—St. Bernard's Hospital—Wednesday, 8.

SPECIAL DEMONSTRATIONS

Visiting surgeons who wish to attend these special demonstrations should apply at headquarters for further information. Arrangements will be made to care for all who are interested, in small classes, at convenient hours.

Bismuth Treatment of Sinuses.....CARL BECK, M.D.
Cystoscopic Examination and Ureteral Catheterization

L. W. BREMERMAN, M.D.

Rectal Anesthesia.....JAMES F. CHURCHILL, M.D.

Fracture Clinic.....FREDERIC A. BESLEY, M.D.

X-Ray Diagnosis.....PATRICK S. O'DONNELL, M.D.

Intestinal Suturing.....WILLIAM R. CUBBINS, M.D.

Cystoscopic Examination and Ureteral Catheterization

HERMAN L. KRETSCHMER, M.D.

Lantern Slide Demonstrations of Infections of the Hand

ALLEN B. KANAVEL, M.D.

Blood Vessel Anastomosis

VICTOR D. LESPINASSE, M.D., AND G. CARL FISCHER, M.D.

X-Ray Diagnosis.....HOLLIS E. POTTER, M.D.

Capital Operations in Obstetrics.....CHARLES E. PADDOCK, M.D.

Wednesday Evening, November 9

CHICAGO MEDICAL SOCIETY, Alexander Hugh Ferguson, President, George F. Suker Secretary

Ligation or Partial Extirpation of Exophthalmic Goiter

CHARLES H. MAYO, M.D., Rochester, Minn.

George W. Crile, M.D., Cleveland, has been asked to open the discussion

Reconstruction Surgery of the Face.....JOHN B. ROBERTS, M.D., Philadelphia

Thursday Evening, November 10

CHICAGO NEUROLOGICAL SOCIETY, D'Orsay Hecht, President, G. W. Hall Secretary, Peter Bassoe Corresponding Secretary

The Pathologic and Clinical Aspect of Poliomyelitis in the Light of the Recent Minnesota Epidemic (lantern slide demonstration) ..H. E. ROBERTSON, M.D., Associate Professor of Pathology in the University of Minnesota.

Discussion by J. W. Jobling, M.D.

Brain Tumor:

(A) Presentation of a Patient Operated for Brain Cyst.

H. M. RICHTER, M.D.

(B) Demonstration of a Brain with Large Hernia Following Decompression for Tumor.....CHARLES A. PARKER, M.D.

(C) Demonstration of Brain Tumor Incarcerated in Foramen Magnum Following Lumbar Puncture.....WALTER W. HAMBURGER, M.D.

(D) Presentation of Specimens of Brain Tumor....PETER BASSOE, M.D.

Friday Evening, November 11

CHICAGO SURGICAL SOCIETY, Jacob Frank, President, Frederic A. Besley Secretary

Surgery of the Bone.....JOHN B. MURPHY, M.D.

Pneumatic Bursting of the Intestine—A New Type of Industrial Accident

E. WYLLYS ANDREWS, M.D.

Discussion by D. W. Graham, M.D., and Frank Pierce, M.D.

Monday Evening, November 14

CHICAGO ORTHOPEDIC SOCIETY, E. W. Ryerson, President, Charles M. Jacobs, Secretary

Congenital Dislocation of the Hip.....JOHN RIDLON, M.D.
A Further Contribution on the Treatment of Painful Feet

JOHN L. PORTER, M.D.

Alcohol Injections in Spastic Paralysis

NATHANIEL ALLISON, M.D., St. Louis

Tendon Transplantation in Infantile Paralysis.....EDWIN W. RYERSON, M.D.

Wednesday Evening, November 16

CHICAGO MEDICAL SOCIETY, Alexander Hugh Ferguson President, George
F. Suker Secretary

Hemolytic Jaundice.....W. S. THAYER, M.D., Baltimore

Other papers and speakers will be announced later.

Friday Evening, November 18

CHICAGO GYNECOLOGICAL SOCIETY, Charles B. Reed, President, Gustav
Kolischer, Secretary

Indications and Technic of Vaginal Cesarean Section

HERBERT MARION STOWE, M.D.

Technic of Metreuryxis.....CHARLES B. REED, M.D.

The Non-Operative Treatment of Pelvic Infections..ROBERT T. GILLMORE, M.D.

Demonstrations of Cystoscopy Technic.....GUSTAV KOLISCHER, M.D.

In addition to the programs given above, a number of distinguished surgeons, who expect to attend the clinical meeting, will be invited to participate.

PUBLIC HEALTH

—By no means should screens be removed from windows and doors at this time. Wait until after heavy frosts, or, better, until snow falls. Flies are still with us and we still have some typhoid to disseminate. Keep your screens in.

—Little Pollie, taken to school for the first time, passed a naive judgment on school ventilation. She looked eagerly around the assembly-room and tugged at her mother's skirts.

"Mamma, mamma, where's the ephalunt?"

"There's no elephant here, dear. This is not a circus."

"Oh, yes there is," cried Pollie, snuffing the air. "I 'mell him."—*Exchange.*

How many Chicago teachers are keeping "ephalunts" in their school rooms? Better open the windows and chase them out.—*From Bulletin Chicago Department of Health.*

—The Chicago Health League was organized October 12, at the rooms of the Visiting Nurses' Association, with Dr. Sidney Kuh president, and Miss Harriet Fulmer secretary. The organization is composed of representatives from eighty different clubs, civic associations and labor unions, and its object is the promotion of the general health of the city. Legislation for better sanitation and health regulation of factories and all places of employment will be demanded by the league.

—We wish to repeat the advice which we have frequently given relating to the prevention of blindness in new-born babes. It is as follows:

Clean the infant's eyes well with boiled water after the head is born. As soon as the body is born wash the eyes again with boiled water, using a different piece of cotton for each eye.

Then open the eyelids and drop two (2) drops of 1 per cent. (1 per cent.) solution of nitrate of silver in each eye. *Do not repeat.*—*From Bulletin of the Chicago Department of Health.*

—The census enumeration shows the population of Chicago to be 2,185,383; the census estimate of the population was 2,282,927. As the death rates had been figured on the latter number, after the enumeration was received the death rates, from 1900 to 1909, inclusive, were refigured with the following results:

Year.	Population.	Total Deaths.	Death Rate per 1,000.
1900.....	1,698,575	24,941	14.68
1901.....	1,747,236	24,406	13.97
1902.....	1,795,897	26,455	14.73
1903.....	1,844,558	28,914	15.68
1904.....	1,893,219	26,311	13.90
1905.....	1,941,880	27,212	14.01
1906.....	1,990,541	29,048	14.59
1907.....	2,039,202	32,143	15.76
1908.....	2,087,862	30,556	14.64
1909.....	2,136,525	31,300	14.65

—The urgent need of better sanitation in cellar bakeries and restaurant kitchens and sharp denunciations of conditions existing in connection with such business undertakings in Chicago and other large cities have been heard by numerous audiences which have lately been addressed by Mr. Charles B. Ball, the head of the Sanitary Bureau of the Department of Health. In these addresses Mr. Ball has discussed the methods for betterment of conditions, and he ventures the prophecy that within a generation the industries of foodmaking will cease to inhabit the caverns and dungeons of the earth, but will be carried on amid appropriate surroundings of daylight and fresh air.

The desire for clean food, he declares, affords a basis for restricting the establishment of new underground installations and the closing up of many now existing. The principal motive is the protection of the health of the "slaves of civilization" working under insanitary conditions.

The proportion of underground shops, the most undesirable location possible for bakeries, is large. In Chicago, in 1907, there were 582 such shops, 43 per cent. of the entire number of such establishments. In many cases the work was done in foul air, with poor lighting and in unclean and poorly kept places. Two hundred and eighty-two of these have been abolished through the instrumentality of the Department of Health. It is possible to eliminate every one of the nuisances and within a generation conditions will have changed completely.—*From Bulletin Chicago Department of Health.*

—We are of the opinion that the time has come to recognize venereal diseases as contagious and to govern ourselves accordingly.

We now have simple laboratory tests for both gonorrhea and syphilis. These tests, if made in the early stages of these diseases, are infallible. There is no reason for guessing as to either of them.

The diseases are just as catching as scarlet fever or smallpox. There are certainly forty innocent little girls under six years of age in the County Hospital now with gonorrheal infections. There are thousands of women who have been infected when the infection is just as unjust as with these children.

The average daily disability in the United States Navy from venereal diseases is great enough to keep three battle ships out of commission. The average yearly venereal rate of the United States Army is 196 per 1,000; that of the German army is 18 per 1,000.

What can be done? As to all of the things which should be done we are not now prepared to say, but we do believe the time has arrived to do the following:

1. There should be bacteriologists in the Health Department laboratory to make free examination for gonorrhea and syphilis.

2. All hospitals, asylums and homes caring for children should have an examination made to determine if venereal disease is present in their institution.

3. All cases of venereal disease should be treated until the disease is ended. The present quite general custom is to cease treatment as soon as the discharge gets less or the eruption fades. At these stages the patient is contagious in the same way as in the earlier stages.

In the meanwhile, the community should be educated to regard venereal diseases as:

1. Highly contagious.

2. Reportable.

3. Quarantinable.—*From Bulletin, Chicago Department of Health*

—The Department Laboratory will make examinations for venereal diseases as follows:

They will examine thin smears on slides or cover glasses from fresh infections where gonococcus is suspected. The limited force in the laboratory makes it impossible to examine smears from old cases. We are fully aware of the limited value of such a service, but it is all that we can render now.

In cases of suspected syphilis the laboratory will make an India ink examination for spirochaetae. This examination is only feasible where there are open lesions, and in the primary and secondary stages. The patients may come to the laboratory at 218 East Washington Street and have the slides made, or the serum can be drawn into a thin glass pipette, this to be sealed and put in a protecting box and then brought in or sent to the laboratory by messenger. India ink preparations on the slide may be sent in by those who have learned how to make them.

By far the most satisfactory results will be obtained if the patient is sent direct to the laboratory, where the specimen may be collected safely and examined at once. If, however, for any reason it is impossible to send the patient to the laboratory, the specimen may be collected in the following manner and delivered at once by messenger:

Take a piece of ordinary glass tubing five or six millimeters in diameter. Heat a central portion of the tube in a fishtail gasflame.

When soft draw out into a capillary. Cut the capillary portion into lengths of three inches, using a small, three-cornered file.

Cleanse the lesion with a cotton swab; rub the ulcerating surface with a platinum wire or a small dull curette until the serum exudes. Collect a small drop or two of serum by touching it with one end of a three-inch capillary tube. Seal each end of the capillary tube by heating the tip in a gas flame. Pack the tube in cotton in a test tube or suitable pasteboard box. Send immediately to the Municipal Laboratory, 218 East Washington Street. Results will be reported by telephone as soon as possible.

Demonstration of the *treponema pallidum* is practicable by this method only in cases showing definite external lesions from which secretions may be obtained, e. g., the chancre, mucous patch, bulla or condyloma latum.

For several years the German army has been using calomel ointment to prevent the spread of venereal disease. At Fort Benjamin Harrison, in this country, Col. L. M. Maus had the men who wished to make use of an ointment consisting of 25 per cent. calomel and 75 per cent. lard. This was furnished in a collapsible tube with a cone-shaped point. In a series of 1,200 possible exposures no case of infection resulted.

In puppies with a gonococcal conjunctivitis the use of the paste saved the eyes.

Last summer Parke, Davis & Co. made 1,000 tubes for an experiment supervised by the department. The results seemed good.—*From Bulletin, Chicago Department of Health.*

—Effectiveness of measures employed to safeguard public health and reduce the death rate from the preventable diseases is best determined through vital statistics, these being to a health administration what book-keeping is to a commercial establishment.

Vital statistics as ordinarily presented are pretty dry reading. They are of interest only to those who of necessity, more or less, must study them. Their importance merits a much wider interest. If vital statistics were more generally understood, the lessons they teach would be more generally appreciated.

It has been the aim of this Department to popularize vital statistics, to present them in such form as to attract the public eye and convey at a glance some things the public should know.

In this day of hustle few people will stop to read much text. Most people will stop to look at a picture, however. Therefore, we are presenting our vital statistics in picture form—we find this the best way of popularizing them.

During the past year the Chicago Health Department has prepared a series of thirty-two of these picture lessons and has distributed thousands of copies to be hung in schools, church lecture rooms, lodge rooms, club houses, settlement houses, ward improvement clubs, in some factories and in other places of public gathering. The demand for them is indicative of popular gathering.

From time to time the bulletin has contained reduced reproductions of some of these statistical pictures. One of the most popular charts we call our "Sanitary Trial Balance—The City of Chicago

in Account with the Preventable Diseases." It shows at a glance to what extent we have gained or lost in our fight against unnecessary disease and death.

The person talking from this chart—and that is the custom in schools—tells of the measures which have been successfully employed in combating these diseases. This all tends to increase the public esteem for the employed measures—it emphasizes the wisdom of vaccination as a protection against smallpox; of antitoxin in the cure of diphtheria; of good milk and pure food in the prevention of diarrheal diseases, etc., etc.

Vital statistics in picture form constitute some of the strongest features of our educational campaign.—*From Bulletin Chicago Department of Health.*

NEW INCORPORATION

Hall Miller Company, \$50,000; surgical appliances; incorporators, E. E. Hall, L. W. Hall, J. W. Moody, Chicago.

REMOVALS

Dr. J. Lee Marder, of Venice, has removed to St. Louis.

Dr. James Murray Washburn has removed from 100 State Street to 31 Washington Street, Chicago.

MARRIAGES

ORIE C. YODER, M.D., Peru, to Miss Sadie Albrecht, of Tiskilwa, September 15.

FREDERIC ATWOOD BESLEY, M.D., to Mrs. Mary E. Busey, both of Chicago, October 6.

FRANK P. WAS, M.D., to Miss Elizabeth Annie Haworth, both of Chicago, September 21.

DANIEL BERNARD HAYDEN, M.D., Chicago, to Miss Julia Howard, of Farmer City, October 8.

L. C. HARLAN, M.D., Madison, to Miss Margaret Groves, of Bunker Hill, October 12, in St. Louis.

GEORGE ALBERT ROGERSON, M.D., Moline, to Miss Mary K. Klache, of Cedar Rapids, Iowa, at Iowa City, recently.

DEATHS

ORLANDO W. CUMMINGS, M.D., Rush Medical College, 1883; died at his home near Buda, September 6, from cerebral hemorrhage, aged 54.

WILLIAM H. WOODBURY, M.D., Hahnemann Medical College, Chicago, 1866; died at his home in Chicago, October 6, from paralysis, aged 85.

JOHN F. MCKINNEY, M.D., Eclectic Medical Institute, Cincinnati, 1876; died suddenly at his home in Arcola, September 14, from heart disease, aged 63.

ROY SAMUEL PORTER, M.D., State University of Iowa, Iowa City, 1903; of Moline, Ill.; died in the Watertown State Hospital, August 31, from general paresis, aged 35.

AUGUSTUS WIERICH, M.D., University of Pennsylvania, Philadelphia 1866; a member of the Illinois State Medical Society; died at his home in Galena, September 13, aged 66.

EDWARD A. WILCOX, M.D., Rush Medical College, 1857; who served his district as representative and senator in the State Legislature, died at his home in Minonk, September 23, aged 80.

HENRY C. GANAWAY, M.D., Meharry Medical College, Nashville Tenn., 1902; of Decatur; a member of the Illinois State Medical Society; was instantly killed, October 4, in an interurban trolley line collision near Staunton, Ill., aged 35.

B. F. REDSHAW, M.D., of Curran, one of the best known practitioners in central Illinois, was instantly killed in the interurban accident, which occurred near Staunton, on the Illinois Traction System, October 4. Dr. Redshaw and his wife were on their way to St. Louis on a pleasure excursion, and they both were killed. Three children survive.

W. W. GAILEY, M.D., of Ashland, died September 27, at Jacksonville. He had practiced for twenty-five years at Ashland, but was compelled to retire two years ago on account of his health. He is survived by his wife and several sons, among them Dr. Byron Gailey, of Jacksonville, and Dr. Watson Gailey of Bloomington. Dr. Gailey was about seventy years of age.

THOMAS EVERETT ALSOP, M.D., Medical College of Virginia, Richmond, 1887; a member of the Illinois State Medical Society, and formerly president of the Clinton County Medical Society and Clinton County Board of United States Pension Examiners, and coroner and member of the Board of Health of Clinton County, and physician to the County Almshouse; died at his home in Carlyle, September 22, from heart disease, aged 50.

ADAM WENGER, M.D., a prominent physician of Concord, was born February 24, 1842, in Lancaster County, Pa., and graduated from the medical department of the University of Pennsylvania. He was surgeon of the 105th Pennsylvania volunteers in the Civil War for three years. For the past twenty-seven years he has been following his profession in Concord. He was also prominent in Odd Fellows and Masonic lodges. The funeral services were held from the Methodist Church at Concord, members of the Masonic lodge assisting in the services.

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ORIGINAL ARTICLES

ACUTE EPIPHYSITIS OF THE HIP *

JOHN L. PORTER, M.D.

CHICAGO

It is simply my purpose to make a brief clinical report on an affection of the hip in children which, from lack of more definite pathologic knowledge I have called acute epiphysitis. I believe the condition is deserving of distinct recognition and that with further study an attempt should be made to differentiate it from the acute suppurative infections on one hand and the chronic infections, particularly tuberculosis, on the other.

During the earlier years of my acquaintance with tuberculous hip disease I was struck with the unusually rapid recovery of certain few cases which apparently presented all the signs of typical early tuberculosis. Later, as a wider experience offered an opportunity to observe more of these cases I noticed that all of them had one feature in common and that was an unusually acute onset, resembling an acute pyogenic infection rather than tuberculosis but without the redness, swelling or high temperature of pus formation.

With the development of Roentgen photography I had hoped to find something in the skiagrams which would throw some light on the early pathology of these cases. In this I have been disappointed except perhaps in one particular, which may be of slight importance.

The lesion seemed to be always confined to the epiphyseal line which looked wider than normal, irregular in outline and somewhat hazy, while the examination of a long series of Roentgen plates of early tuberculosis of the hip shows a wide variation in the location and extent of the tuberculous foci. But I could see nothing about the epiphyseal changes in these cases which would enable me to say they were or were not tuberculous.

It seems therefore that a better differentiation of these cases from the other recognized forms of acute and chronic infections of the hip must

* Read before the Chicago Medical Society, Oct. 26, 1910.

come through a closer study of the clinical findings since, as I have said, they all recover without abscesses or other complications which require invasion of the joint and the opportunities for direct pathologic investigation are lacking; and it is with the hope of provoking further discussion and closer observation of such cases that I have ventured to present this subject to-night.

The last five cases which have been under observation, and all of which have apparently recovered, will illustrate the clinical history of this affection. Two were girls, three boys; ages ranged from 4 to 11 years. In no case was there a history of trauma. In all cases but one, the oldest, the onset was so acute that within twenty-four hours the patient could not walk on account of pain. In the oldest case the onset was less acute and the patient continued to walk but limp and complaint of pain in hip developed very suddenly.

In all cases the pain was referred to the groin directly over the joint and in no case was there pain referred to the knee. In two cases a slight fulness at the site of the pain in the groin could be seen, suggesting some synovitis but no marked tension. In the other three cases no sign of synovitis could be discovered. In none of the cases during all the course of treatment was there any marked thickening or induration of the peri-articular tissues. All the cases showed marked limitation of motion at the hip, muscular spasm and pain on motion during the earlier stage of the attack.

In all the cases the acute symptoms subsided rapidly under rest in bed, though the limitation of motion and some spasmodic contraction persisted for a longer time. In three cases temperatures were taken at intervals from the start but was found elevated in but two, rising from 1 degree to 1.5 degree during first ten days. In the other two no temperature was taken until after acute stage had subsided, when it was absent.

One very noticeable point in all the cases was the very slight degree of atrophy which developed during the entire course of the disease and which might easily be due to the immobilization. This is in marked contrast to tuberculous joints where the atrophy appears early and increases rapidly during the first stages of the disease.

In one case von Pirquet's tuberculin test was used and a positive reaction resulted, but strange to say, that case recovered more quickly than any of the others under continued immobilization and crutches. In one case, after apparent recovery, a marked talipes cavus with slight equinus developed in the foot of the affected leg and has progressed in spite of treatment, though no definite paralysis can be made out and the hip remains perfectly well. In none of these cases was there any history of preceding infection such as typhoid, measles, scarlatina or diphtheria, which might account for the acute arthritis.

The time required for recovery has varied from ten weeks to ten months. In the latter instance, however, I believed the case to be well some time before the immobilizing apparatus was abandoned. I have not seen just the same clinical picture affecting any of the other joints.

DISCUSSION

Dr. Edward H. Ochsner:—Since Dr. Porter has called our attention to this matter, I am able to recall several cases which unquestionably come under this head, although I am free to confess that at the time they were under treatment I did not follow them up in this logical manner outlined by him, and I considered them unusual cases of tuberculosis of the hip. I noticed at the time there was something peculiar about them, the onset was more acute and they recovered more rapidly than the ordinary cases of tuberculosis of the hip do. However, I would still be inclined to believe it might be extremely difficult in every case to tell whether it is one of epiphysitis, as Dr. Porter has outlined, or whether it might not after all be an atypical case of tuberculosis of the hip. There is no hard and fast picture for these affections, and we know in other portions of the body that a moderate pyogenic infection may simulate a rather acute tubercular process almost to a tee, and I see no reason why that might not be the case here. We know from practical experience that in the growing individual the epiphysis is the favorite location for all forms of septic infection. We also know, from our experimental work in young dogs, that the tendency of the infection to locate at the epiphysis can be increased by trauma; thus, for instance, if the virulent micro-organisms are injected subluxation and the animal traumatized epiphyseal involvements are sure to occur.

From these clinical data and experimental observations and from the fact that pyogenic micro-organisms may cause a great variety of symptoms from the mildest to the most severe, we are led to believe that the observations reported this evening by Dr. Porter are not only possible, but very probable.

Dr. Porter (closing the discussion):—I have very little further to say. The acute typhoid infections mentioned by Dr. Ferguson constitute a well-recognized form of hip infections. We run across them every once in a while following typhoid fever. They almost invariably occur during the convalescence of the disease after the intestinal symptoms have subsided. I have in my office a very interesting series of *x*-ray plates showing the effect of the typhoid infection on the epiphysis of the hip-joint, showing separation of the epiphysis. Where the hip-joint does not burst open and discharge or is not opened and drained following typhoid infection, the destruction of the articular surfaces goes on very much the same as in acute tuberculosis and the patients get well with an ankylosed hip-joint. We also recognize as a distinct and definite class of tuberculous infections the acute class, the acute type, which Dr. Ochsner has referred to, which comes on so acutely that we are confused in our early diagnosis, but the subsequent development of the case clears up the diagnosis. They do not get well in from six to eight weeks or from six to eight months. During my early tutelage as a student and intern under one of the best orthopedic surgeons in this country, I had it impressed on me year after year that infections of the hip-joint which showed muscular spasm, limitation of motion, and without any acute pyogenic infection, such as abscess, high fever, redness and swelling, were tuberculous.

My object in bringing up this subject was to make the statement that they are not all tuberculous, and in the first ten years of my practice I treated these cases with immobilization and traction for months, because the idea was impressed on me that they must be tuberculous because they were not pyogenic, and I contend that we come across cases every once in a while which present all the symptoms of acute epiphysitis. They are not pyogenic so far as the development of abscess is concerned. They may be a type of pyogenic infection which Dr. Ochsner suggested, and which undergoes resolution. They are not tuberculous because they do not go through the typical course of tuberculous destruction of the joint, and we cannot find any other clinical finding of tuberculosis. The characteristic induration and exudation that occur around tuberculous joints are absent.

THE COMMITMENT AND CARE OF THE INSANE OF COOK COUNTY *

J. P. HOUSTON, M.D.

CHICAGO

Fiction has more readers than law. Because a figment of the imagination attractively garbed commands far wider audience than fact however clearly stated, there exists in the public mind the belief that much wrong has been and probably is still being done under cover of proceedings in insanity. How largely the medical profession shares in this belief I cannot say, but three and one-half years' experience as medical juror in inquests in lunacy in this county have shown me that our profession as a whole has little definite knowledge of the legal process of commitment of the insane, and the reasons for the same. Nor does either the public or our profession have any accurate knowledge of the way these unfortunates are cared for in our institutions. In fact there exists a pretty general misinformation regarding this matter and this is responsible for much unwarranted criticism and none can estimate how much mental suffering on the part of friends and relatives of the insane. A single illustration points the moral. A half-column article with the following headlines appeared in the Chicago Tribune, March 16, 1910:

FREED THROUGH DEATH

Woman reported sane dies in Dunning Asylum with release near. Sent there by daughter. Broken heart believed to have hastened end of Mrs. Elizabeth Noyce Cutter.

The article fitted the headlines and like them was as far as possible from fact. Such things keep occurring to the detriment not only of the patients and institutions but of the whole community. Much of this could be remedied by the medical profession. Accurate knowledge of these things would make such a travesty on truth as the preceding impossible, and would do much to lessen the disastrous results of mental diseases. If the public were correctly informed, I believe, there would come about in time a general desire that persons afflicted with mental diseases be treated early in our hospitals, instead of using these institutions as a last resort after the patient is hopelessly insane. The purpose of this paper is to direct the attention of this society to this important matter and to awaken, if possible, an enlightened interest in this subject.

The commitment of an insane person presupposes his subsequent restraint such as the care and treatment of his case may necessitate. Because it may become imperative that he be restrained of his liberty and put under the absolute control of some institution or individual who shall have power to do with his person what the exigencies of the case may require for the patient's welfare and the safety of the public, a legal commitment is indispensable. In view of these possibilities and because they involve what to us are some of the inalienable rights of the individual,

* Read at the meeting of Chicago Medical Society, Oct. 26, 1910.

we find it necessary to shape our methods of dealing with these cases in accordance with law. What then are the rights of a person alleged to be insane? The fifth amendment to the Constitution of the United States provides that "no person shall be deprived of his life, liberty or property, without due process of law," and further the fourteenth amendment to the same instrument provides that "no state shall deprive any person of his life, liberty or property without due process of law." Article 2, Section 2, of the Constitution of Illinois, which is entitled "Bill of Rights," provides that "no person shall be deprived of his life, liberty or property without due process of law." This rule that a person shall not be deprived of his life, liberty or property without an opportunity to be heard in defense of his right is founded on the first principles of natural justice and is older than any written constitution. It is the foundation of the guaranty of due process of law. Neither federal nor state constitutions have attempted to define what is due process of law, nor have the courts been able to give a definition covering all possible cases. It is sufficient for our present purposes to know that our constitutions, federal and state, guarantee to every insane person or person alleged to be insane, the right to such a hearing and adjudication of his case, as shall clearly come under the term "due process of law," as determined by the courts having jurisdiction over such cases, before he may be deprived of his liberty and consigned to the restraint of an individual or an institution. This holds good despite the fact that such a course of action is dictated by his own best interests as well as by the public welfare. No mere legislative enactment can, by any subterfuge or specious procedure designed to smooth away generally considered objectionable features of such legal proceedings, circumvent or abridge this guaranty; nor can the judicial powers enjoyed by the courts having jurisdiction of such cases be delegated to any commission or body of men not vested with the judicial authority. The commitment of an insane man presupposes a court having jurisdiction and the formal action of such a court.

In pursuance to these constitutional requirements, the legislature of this state has enacted laws providing for the care of the insane and the preservation of all the rights of such persons. Our county courts having jurisdiction in these cases, have wrought out certain forms of procedure and prescribed the details to be observed in the enforcement of these laws.

The sections of the laws of Illinois covering these cases are as follows:

REVISED STATUTES, CHAPTER 85 (LUNATICS)

AN ACT to revise the law in relation to the commitment and detention of lunatics, and to provide for the appointment and removal of conservators, and to repeal certain acts therein named [Approved June 21, 1903. In force July 1, 1893, L. 1893 p. 190; Legal News Ed., p. 100].

1. INSANE DEFINED.—*Be it enacted by the People of the State of Illinois, represented in the General Assembly, That the word insane in this act shall be construed to mean any person who, by reason of unsoundness of mind, is incapable of managing and caring for his own estate, or is dangerous to himself or others if permitted to go at large, or is in such condition of mind or body as to be a fit subject for care and treatment in a hospital or asylum for the insane; Provided, that no person, idiot from birth, or whose mental development was arrested by*

disease or physical injury occurring prior to the age of puberty, and no person who is afflicted with simple epilepsy shall be regarded as insane, unless the manifestations of abnormal excitability, violence or homicidal or suicidal impulses are such as to render his confinement in a hospital or asylum for the insane a proper precaution to prevent him from injuring himself or others.

2. NOT RESTRAINED OF LIBERTY.—Except as hereinafter provided, from and after the passage of this act no insane person, or person supposed to be insane, but who shall not have been legally adjudged to be insane, shall, by reason of his insanity or supposed insanity, be restrained of his liberty; *Provided*, that this section shall not be construed to forbid the temporary detention of an alleged lunatic, for a reasonable time, not exceeding ten days, pending a judicial investigation of his mental condition.

3. PROCEEDING FOR SUPPOSED INSANITY: STATEMENT.—When any person shall be, or be supposed to be, insane, any reputable citizen of the county in which said patient resides or is found may file with the clerk of the county court of said county, a statement, in writing, under oath, setting forth that the person named is insane and unsafe to be at large, or suffering under mental derangement, and that the welfare of himself or others requires his restraint or commitment to some hospital or asylum for the insane; that said statement must be accompanied by the names of the witnesses (one of whom at least must be a physician, having personal knowledge of the case), by whom the truth of the allegations therein contained may be substantiated and proved: *Provided*, that when it shall appear by such statement the person alleged to be insane has not been examined by a physician, the judge may appoint a qualified physician of the county to make such examination and allow him compensation therefor, not exceeding five dollars, which shall be taxed and collected as is herein provided in respect to other costs in proceedings in inquests of lunacy.

4. COUNTY JUDGE TO ISSUE WRIT: HEARING.—Upon the filing of the statement aforesaid, unless the person alleged to be insane shall be brought before the court without a writ, or unless an affidavit of some credible person shall be filed setting forth that, in the opinion of the affiant, the physical or mental condition of the said person is such (stating the same) as to render it manifestly improper that such person be brought before the court, the judge of the county shall direct the clerk to issue a writ, directed to the sheriff or to any constable or to the person having custody or charge of the person alleged to be insane, commanding such person to be brought before the court at such time and place as the judge may appoint for the hearing and determining of the matter; and in no case shall such hearing take place until the person alleged to be insane shall have been notified as the court shall direct.

5. INQUESTS IN LUNACY SHALL BE BY JURY OR A COMMISSION OF TWO PHYSICIANS.—Inquests in lunacy shall be by jury or a commission of two licensed physicians engaged in active practice in said county, as hereinafter provided. (1) [As amended by act approved May 14, 1903. In force July 1, 1903; L. 1903, p. 245; Legal News Ed., p. 201].

6. COMMISSION OF PHYSICIANS.—When no jury is demanded and the circumstances of the case are such that there appears to the judge to be no occasion for the impaneling of a jury, or that a trial by jury would for any reason be inexpedient or improper, the judge shall appoint a commission of two qualified physicians in regular and active practice who are residents of the county, to be chosen by himself, on account of their known competency and integrity, who shall make a personal examination of the patient and file with the clerk of the court a report in writing verified by affidavit, of the result of their inquiries together with their conclusions and recommendations. The commissioners herein provided for shall have power to administer oaths and take sworn testimony.

7. JURY OF SIX; QUALIFIED PHYSICIANS.—In all cases of inquest by jury the jury shall consist of six persons, and one of the jurors at least must be a qualified physician, and the proceedings shall conform in all respects, as nearly as may be,

to the ordinary practice of the county court. The rights of the person whose mental condition is inquired into shall be the same as those of any defendant in a civil suit.

8. INQUESTS IN OPEN COURT OR IN CHAMBERS OR AT HOME; EXCLUSION OF SPECTATORS.—Inquests in lunacy may be in open court or in chambers, or at the home of the person alleged to be insane, at the discretion of the court; the judge shall preside whether the inquest be by jury or a commission, and the presence of the patient shall be indispensable and no proceedings can be had in his absence unless otherwise provided in this act. The judge may require all persons other than the patient, his friends, witnesses, licensed attorneys and officers of the court to withdraw from the court room during the inquest.

11. RECORD OF FINDING.—Upon the return of the finding of the jury or commission, the court shall cause the same to be recorded at large, and shall enter the proper order, in accordance with the finding of the jury or commission, for the disposition of the person alleged to be insane; such order may discharge the patient with or without conditions; or remand him to the custody of his friends, or commit him to some hospital or asylum for the insane, public or private, within the limits of this State, or to a county insane asylum or insane department of a county almshouse, if there be a county almshouse, or a department for the insane in the county almshouse in the county where such alleged insane person resides. But whatever order may be made in the case shall stand and continue to be binding upon all persons whom it may concern until rescinded, reversed or otherwise legally superseded or set aside. Appeals shall be allowed to the Circuit Court from any order or judgment made or rendered under this act upon the appellant giving such bond and security within such time as the court may direct.

Pursuant to these statutes the county court of Cook county has adopted the following detailed method of procedure in inquests in lunacy:

We will suppose that John Doe of Cook county becomes insane and his condition is such as to require that he be taken care of in some hospital. Some other citizen, relative or neighbor calls in a physician in active practice of his profession, who makes an examination of the mental condition of said John Doe and on being convinced of his insanity makes out in writing a statement to that effect about as follows:

To the Honorable Lewis Rinaker,

County Judge, Cook County, Ill.

This certifies that I have this day examined John Doe and find him insane and a fit person to be cared for in a hospital for the insane.

Date.

JOHN BROWN, M.D.

With this certificate the aforesaid citizen of Cook county, friend or neighbor of said John Doe, presents himself to the clerk of the county court, room 600, County building, where on presentation of said physician's certificate, he makes application for an inquest in lunacy, in case of said John Doe. When an inquest by jury is desired the application is made on the following blank form. On the reverse side of this form are found the following:

APPLICATION TO TRY THE QUESTION OF INSANITY.—LAW OF 1893

State of Illinois, County of Cook, ss.

In County Court of Cook County.

To the Honorable Lewis Rinaker, Judge of said Court:

Your petitioner ——— would respectfully represent that —he is a reputable citizen of said County, and that —he believes that ——— resident of ——— County, is insane, or suffering under mental derangement, and unsafe to be at

large, and that the welfare of h—self or others requires h— restraint or commitment to some Hospital or Asylum for the Insane. The facts in the case can be proven by ——— a regular practicing physician, having personal knowledge of said case, and by ———, ———, ———, all whom are residents of this County, and that the said ——— has ——— property ——— effects ——— wherefore your petitioner prays that a warrant be issued for said ——— and that a venire may be issued for a jury of six good and lawful men, one at least of said jurors to be a qualified physician, to determine the truth of the allegations in the foregoing petition contained, and also, that a subpoena be issued for the witnesses named, returnable at such time as may be fixed by your Honorable Court.

———— being duly sworn, deposes and says that the foregoing petition by ——— subscribed is true to the best of h— knowledge, information and belief.

Sworn to and subscribed before me, this ——— day of ——— A. D. 19—.

————
Clerk of the County Court.

When application and physician's certificate are found to be in due form, the county judge signs the application whereupon the following writ issues:

State of Illinois, County of Cook. ss.

In the County Court of Cook County.

The People of the State of Illinois,

To the Sheriff of said County, ——— Greeting:

WHEREAS, It has been represented to the Honorable LEWIS RINAHER, Judge of this Court, by ——— in a petition duly verified, that ——— is believed to be insane, and whereas said Judge has appointed the hearing of said petition for the ——— day of ——— A. D. 19— at ——— M., and has ordered that until and pending the hearing aforesaid, said alleged insane person be committed to the custody of the Keeper of the Department for the Insane, in said County;

You are therefore hereby commanded to arrest said ——— forthwith, and convey and deliver h— to the Keeper of the Department for the Insane, in Chicago, Cook County, Illinois, and said Keeper is hereby commanded to receive and keep said ——— in safe custody until the ——— day of ——— A. D. 19—, at ——— M., at which time said Keeper is commanded to have h— before our County Court, and then and there to await and abide the result of the trial.

And have you then and there this Writ, and make due service as the law directs.

Witness, JOSEPH F. HAAS, Clerk of our said Court, and the seal of said Court, at Chicago, in said County, this ——— day of ——— A. D. 19—.

———— Clerk.

An order setting the case for trial is issued by the court as follows, with a copy which by the order of our present county judge must be served on the person alleged to be insane on the second day prior to the hearing of the case:

ORDER SETTING CASE FOR TRIAL

State of Illinois, County of Cook. ss.

In the County Court of Cook County.

In the matter of the alleged insanity of ———.

WHEREAS, It has been represented to the Honorable LEWIS RINAHER, Judge of this Court, by ——— in a petition duly verified that ——— is believed to be insane; it is ordered by the Court that said case be called for trial at the Court Room, in the Detention Hospital (corner Wood and Polk Streets), in the City of Chicago, County of Cook, and State of Illinois, on the ——— day of ——— 19—, at 9 o'clock a. m.

It is further ordered by the Court, that a copy of this Order be delivered to said ——— alleged to be insane, on or before the ——— day of ——— 19—.

Judge of the County Court of Cook County.

Interrogatories consisting of a list of questions whose answers correctly and intelligently given would furnish valuable data to the court, jury and superintendent of the hospital to which the patient may be sent, are given to the person making the application for the inquest. These are supposed to be filled out by the friends of the patient and brought to the court at the hearing. These questions are so numerous, presuppose far greater general and technical knowledge of the patient's heredity and personal history than is possessed by his friends in the great majority of cases, and require so much greater intimacy with these factors than even well-informed people have, that in most cases they defeat their designed aim. One gets some rather incongruous answers as in the case of a *man* recently before my jury we found according to the interrogatories that he had suffered from laceration of perineum during last child-birth. These questions are put out by men in actual charge of hospitals, and on purely theoretical grounds no exception can be taken to them. But certainly a generous discount must be made as to the amount of practical information they will furnish.

Jury cases are set for hearing on Thursday mornings at 9 o'clock in the court-room at the Detention Hospital. Court opens promptly at the stated time and cases are called as a rule in order of arrival of witnesses. Court is opened by the representative of the sheriff's office in the usual manner and the first case is called. The patient is brought into the court-room, the jury sworn, witnesses are sworn and evidence taken as in civil suit before said court. After hearing four cases the jury retires to make up its verdicts and its place is taken by jury No. 2, which after hearing four cases is succeeded by Jury No. 1 and so on till the end of the call for that day is reached.

VERDICT OF JURY

State of Illinois, County of Cook. ss.

We, the undersigned jurors, in the case of ——— who is alleged to be insane, having heard the evidence in the case, are satisfied that the said ——— is ——— insane, and is ——— a fit person to be sent to a State Hospital for the Insane; that —he is a resident of the County of Cook, in the State of Illinois; that h— age is ——— years; that h— disease is of ——— duration; that the cause is ——— unknown; that the disease is ——— with h— hereditary; that —he is not subject to epilepsy; that —he does ——— manifest homicidal or suicidal tendencies, and that clothing and a bond therefor should be furnished and the costs should be paid by ———.

————— Jurors.

It is to be noted here that within the past three years decided improvements have been introduced into the proceedings of this court. A representative of the county attorney's office conducts the proceedings in accord with the laws, instead of the superintendent of the detention hospital, as formerly. A stenographic report of all proceedings including testimony is made. The whole proceeding has been systematized so as to

run as smoothly as may be and every effort is made to expedite the work, at the same time giving sufficient time to every case to satisfy those interested that due attention has been given to every interest. These most gratifying results have come as the result of the interest in these cases by the present county judge, the Hon. Lewis Rinaker and his thoroughly helpful attitude with regard to this branch of court work. Under his administration these unfortunate persons have been most carefully dealt with and all their rights most sedulously guarded.

The other method of conducting an inquest in lunacy is by a commission. It is well to state at the outset that the interpretation of the law governing these proceedings seems to the lay mind quite at variance with the letter of the law. But for this county at least the following procedure is the legal one. On presenting the physician's certificate to the clerk of the county court, the person taking the initiative signs the following form:

APPLICATION FOR APPOINTMENT OF COMMISSION TO TRY THE QUESTION OF INSANITY

State of Illinois, County of Cook. ss. In County Court of Cook County.
To the Hon. LEWIS RINAKER, Judge of said Court:

Your petitioner ——— would respectfully represent that he is a reputable citizen of said County, and that —he believes that ——— a resident of ——— County, is insane, or suffering under mental derangement, and unsafe to be at large, and that the welfare of h—self or others requires h— restraint or commitment to some Hospital or Asylum for the Insane. The facts in the case can be proven by ——— a regular practicing physician, having personal knowledge of said case, and by ———, ———, ———, all whom are residents of this County, and that the said ——— has ——— property ——— effects ———. Affiant further says that the physical and mental condition of said ——— is such as to render a trial by jury inexpedient, and that it is manifestly improper for the said ——— to be brought before the court, for the hearing and determining of said matter.

Your petitioner therefore prays that this Honorable Court appoint a commission of two qualified physicians to examine said ——— and report to this Honorable Court their conclusions and recommendations.

———
———
——— being duly sworn, deposes and says that the foregoing petition by ——— subscribed is true to the best of h— knowledge, information and belief.

Sworn to and subscribed before me this ——— day of ——— A. D. 19—.

———
Clerk of the County Court.

On its receiving the approval of the county judge, a writ issues as in the case of a jury trial, but in form changed to meet the conditions of the case. This is necessary because the mental condition of the patient precludes the possibility of his waiving any of his rights. An order setting the case for hearing at the home, permanent or temporary, of the patient issues and a copy of same is served on the patient as in an inquest by jury. The county judge appoints a commissioner for hearing of this case using this form. This appointment is made of record.

APPOINTMENT OF COMMISSION IN INSANITY

State of Illinois, County of Cook. ss.

In the County Court, ——— Term, 19—.

In the matter of the alleged insanity of ———.

To ——— M.D., of ——— and ——— M.D., of ——— in the County of Cook, and the State of Illinois.

You are hereby notified, that an order was entered on the ——— day of ——— A. D., 19—, by the Honorable Judge of the County Court of said County, appointing you Commissioners to inquire into the alleged insanity of ——— a resident of ——— in said County.

You will therefore proceed at once to make a personal examination of said ——— and file with the Clerk of this Court a report in writing, verified by affidavit, of the result of your inquiries, together with your conclusions and recommendations.

You are empowered by law to administer oaths and take sworn testimony, if necessary.

Given under my hand and seal of the County Court, at Chicago, Illinois, this ——— day of ——— A. D. 19—.

Clerk of the County Court.

At the appointed hour there is convened at the patient's home a branch of the county court, consisting of the county judge, deputy clerk of the county court, deputy sheriff, court stenographer and the commission of two physicians.

Witnesses are sworn and testimony taken as in inquests by jury. The members of the commission may if necessary to satisfy themselves as to the mental condition of the patient, make further physical examination of the patient and ask for further information about the case. The commission then makes proper returns of its findings and recommendations as to the judge on the following blank:

REPORT OF FINDING OF COMMISSION—INSANITY

State of Illinois, County of Cook. ss.

Of the ——— Term, A. D. 19— of the Cook County County Court.

In the matter of the alleged insanity of ———.

To the Hon. ——— Judge of said Court:

We, the undersigned, Commission, appointed by an order of this Court to make a personal examination of ——— of said County, alleged to be insane, would respectfully report that we did, on the ——— day of ——— A. D. 19—, make a personal examination of the said ——— alleged to be insane, and as a result of our inquiries we find that the said ——— is ——— from which we concluded that —he is insane, and we would respectfully recommend that —he be sent to some public or private hospital or asylum for the insane ———.

M.D.

M.D.

State of Illinois, County of Cook. ss.

——— and ——— each of the County and State aforesaid, being first duly sworn, upon their oath say that they have read the foregoing report signed by them, and know the contents thereof, and that the same is true, to the best of their knowledge, information and belief.

M.D.

M.D.

Subscribed and sworn to before me, at Chicago, this ——— day of ——— A. D. 19—.

The patient is committed by the judge as in a jury case. There are two differences in the two methods. By commission everything is done in the privacy of the patient's home or the court-room, from which visitors are excluded, and the costs are considerably greater. In each the proceedings, findings and judge's orders are of public record. We owe the more frequent use of the commission in lunacy inquests to the present county judge, Hon. Lewis Rinaker, who devised the above procedure as fully complying with the laws and securing to the patient all his legal rights, at the same time guarding against any possible abuse by evil disposed parties in this populous city.

It is clearly evident therefore that no person alleged to be insane can be rushed off to the hospital irregularly, even in Cook county. To successfully evade the law would require that too many persons wink at such evasion and a degree of corruption altogether unthinkable, even in this day of graft.

To the advocates of a psychopathic hospital to which the insane person may be taken without legal commitment, little more should be needed to show the futility of such a project. Before such a thing could be done except at great risk of incurring heavy personal penalty, guaranty of due process of law must be erased from our constitutions, and our courts cease to recognize it as one of the individual's natural rights.

The physician who holds his patient in restraint, the man who confines his wife or child suffering from mental derangement, without first securing the proper decree of court, lays himself open to suit for damages on more than one count and faces consequences of no small magnitude. And to what end should we establish such a hospital? That we allay or rather sidestep the prejudice existing against insane hospitals and so secure easy and effective treatment of the insane. Such a scheme would be ineffective even in that respect, because already the general public understands the meaning of psychopathie, as witness the common expression in vogue on the vaudeville stage, "You for the psychopathic ward." There is just one method of accomplishing this desirable change in public opinion. That way is to make people understand that what we have is above just criticism, everything considered.

In taking up the care of these unfortunates, I wish to state at the outset that I am not an alienist, nor shall I enter on a discussion of this subject from the alienist's point of view. Rather permit me to point out what I deem commendable in the present conditions and suggest a line of action which shall make for a betterment of our institutions and a removal of some of the objectionable features of our present régime.

The insane of Cook county are cared for in private sanatoria, the County Hospital for the Insane at Dunning and the State Hospitals at Elgin and Kankakee. Of these private institutions I shall say little save that their rates preclude their taking care of any but well-to-do patients. I do want to protest strongly against the unfair comparison drawn between them and our public institutions, always to the disadvantage of the latter. The two admit of no just comparison so absolutely dissimilar are they in every respect. Nor can I leave this point without giving

utterance to the strongest condemnation possible of an institution purporting to care for the insane, whose care consists of locking the patient into a 6x10 room with grated windows and double doors and doping him with bromids, etc., to keep him quiet. At one such hospital a general paralytic was kept thus secluded without being taken out of his room for exercise for nearly two months. He was a perfectly tractable patient and for some weeks after being removed from this institution was cared for very satisfactorily in a general hospital. Such an imposition on a credulous and unsuspecting public under the guise of a private sanitarium for giving care to the insane is to say the least a sorry comment on the intelligence as well as the public spirit of our profession.

Such institutions are a thousand times worse than our public institutions ever could be and should be put out of commission or made to reform so as to conform to the latest ideals as to the care of the insane.

The Detention Hospital, to which patients are taken pending the hearing of their cases, has been much improved within the past few months. A system of baths has been installed, making it unnecessary to use drugs, except occasionally to quiet maniacal patients. The whole building has been refurnished and is now in good shape, but it is old and wholly inadequate. The quarters for the patients are insufficient, badly arranged and illy adapted to their purpose. They do not admit of any segregation of patients except as to sex. The idea of its designers seems to have been that any building which would hold the patients was all that is required.

Then the courtroom and waiting-rooms used by friends of patients who come as witnesses on court days are badly arranged, both for facilitating court business and for the comfort and convenience of all concerned. Reasonable ventilation is impossible in the courtroom and the waiting-rooms are positively foul an hour after the opening of court. There is great need of remodeling the building and making additions to remedy these glaring defects. Given a building adapted to the purpose of caring for Cook county's weekly quota of insane cases and the accommodation of court and those in attendance on its sessions and most of the criticism hitherto directed at the Detention Hospital would disappear.

Of the County Institution at Dunning, where what may be termed the permanent care of most of Cook county's insane is furnished, it is difficult to speak briefly and do the subject justice. I crave your forbearance while I detail some of the important features to you.

First, I would have you note that some of the buildings in use at the present time were erected just after the Chicago fire in the early seventies. These are at the present time open to serious objections, though at the time of their building they were considered high grade. There are beside these ancient structures others of various ages running down to the past few years, all open to the criticism which the present passes on the things of yesterday. While it is easy to adapt surgical technic or a course of internal medicine, etc., to the last advance in our knowledge of disease and its cure, it is not always a possible thing to change the buildings of public institutions or private either, for that matter, to conform to the

latest ideas in hospital architecture. It is in such cases necessary to make the best use possible out of the old. Just that thing is being done at Dunning. The old buildings are used to the best advantage. They are kept clean and in order. The newer ones are likewise put to the service to which they are best adapted. That much heralded tuberculosis hospital, which proved such a disastrous failure, makes a very creditable psychopathic hospital ward with such equipment of operating rooms, bath rooms, etc., as the needs of the institution require. The work of this department of the hospital is of high grade and deserves our hearty commendation.

In another respect the management of the institution is to be congratulated. I refer to the manner in which the two functions of the hospital are carried out. Such an institution must furnish remedial or curative care to one class of patients and custodial care to that large class of hopeless cases, the incurable insane. A thorough study of the work done at Dunning will convince any fair-minded man among you of the excellent work done under very discouraging conditions. In spite of the age and inadequacy of the buildings, the wards are kept scrupulously clean and sanitary, with far better ventilation than one could reasonably hope for; the bedding and other equipment clean and free from vermin, the patients are kept tidy and presentable as their condition permits. Of the mere custodial care given at the present time I cannot better tell you than by relating conditions I found on two separate visits to the institution.

Some twelve or fifteen years ago, I visited one of the untidy wards, in which were assembled the cases of dementia, etc., with nothing of mind left, mere human animals. About the ward were piles of human excrement, the patients were filthy in appearance and the stench from the room was almost unendurable. Some months ago I went through that same ward. It wasn't visiting day, and only the daily care had been given to the ward. The floor was clean, the patients had on clean dresses, two strips of carpet were laid across the floor and clean cloths were on the tables. The air was good, the only noticeable thing being a slight odor of some deodorizer and disinfectant. One of our medical men wrought that transformation. I doff my hat in most unaffected admiration and make my best obeisance in acknowledgment of the honor due the man who can achieve so worthy a thing; nor do I abate one whit of the same admiration and honor for him who to-day continues that praiseworthy work.

That you may understand something of what it means to make one of our insane hospitals a reputable institution, let me cite one or two of the difficulties.

First let me bring before you the patient. What is he? What does his care demand of his attendants? Someone has said "an insane hospital is a hell." What makes it so? Its inmates, whose distraught minds produce all the gradations from fiend incarnate to pitiable dement. To properly care for such requires the patience of Job, the kindness of a saint and the devotion of a martyr—three in one. Do you for a moment suppose that for from \$25 to \$37.50 per month with board, lodging and

washing, you can secure men attendants largely endowed with the above qualities, or that women up to the requirements can be had for from \$20 to \$32.50 per month? Such wage, almost ridiculous in its inadequacy, with the peculiar characteristics of the work required, make it impossible to secure a high grade of material of which to make attendants. But whatever the quality of this material as it is presented, the superintendent must imbue, aye, oftentimes endow it with the required patience, kindness and devotion, if he would keep up sufficient *esprit de corps* to secure reasonably satisfactory results. To the honor of our superintendents and the credit of their helpers, is it said truly that conditions at Dunning, Elgin and Kankakee are eminently satisfactory, with a large majority of the working force loyal to the institutions and efficient in their work, despite the insufficient remuneration. Again I would point out the small means provided to care for these patients. Food and service, including medical service, attendance, etc., costs \$112 per capita per annum at Dunning, and at Elgin and Kankakee about the same. Would you agree to furnish a good, wholesome, sufficiently varied diet and care, for such sum at present price of provisions? It is true that the diet furnished lacks variety, but there can be no question that it is wholesome and sufficient. No just criticism can be made upon our institutions because of this lack of variety until we dig down into our pockets and pay enough in taxes to add sufficient to the appropriations to enable the superintendents to enlarge the dietary of these poor people.

As a summary of what this society can do to help out in these matters, permit me to say with all the power I can command, Don't criticize unless you are able to suggest definite and feasible improvement. Don't despair of bettering matters. Study conditions. Lend a hand in creating a better knowledge in the community of the good in the institutions; learn enough about them yourselves to feel a pride in their excellence and speak a good word everywhere and always. Urge greater appropriations, better buildings; in a word, get in line with the uplift and cheerfully pay your share of increased taxes. The worst thing you can do is to criticize unjustly through ignorance or wilfulness.

Just a word on a kindred subject. This state ought to have an epileptic colony. If you doubt it, go over to the Detention Hospital some Thursday and see the little boy or girl victim of epilepsy whose disease has made it necessary he should be cared for at an institution. They must be taken care of and we have to send them to the insane hospitals, because our legislature has failed to make appropriation for their proper care. Let us compel the next legislature to found an epileptic colony and do what this great, wealthy state should long since have done.

DISCUSSION

Dr. O. C. Willhite:—I enjoyed very much Dr. Houston's paper. I think he outlined very well the procedure in connection with the commitment of patients to the hospital for the insane. Personally, I feel, and always have felt, that the legal proceedings in connection with the commitment of an individual to an insane hospital are rather burdensome and often to the detriment of the patient. It seems to me that where it is plainly evident that the individual is insane, these

people could be committed by means of a commission and the welfare of the patient guarded at the same time.

It seems to me there are two things in connection with the paper that are of great importance. The first is the commitment, and second, the etiologic factors in connection with the case. The doctor has referred to the interrogatories at the time of admission, and as he has stated they are often incomplete and of little value. The point in question is, however, a very important one: we should have some accurate data on the etiology of insanity as well as its prevalence. If it were possible for either the government, state or somebody to study and secure accurate data of all cases committed to an institution for a period, say a year, we might gain some valuable information.

At the present time there is in the insane hospitals in the state of Illinois about one insane individual to every 450 of our population; we also find that we have about one epileptic to every 500 and one feeble-minded to every 500; if we take the inebriates and all other mentally defective individuals, you will see that we have a very large proportion of mentally unbalanced individuals and no accurate data in reference to their case. It is not so much the question of caring for the present number as it is to stem the tide of the constantly increasing number.

I have but very little to say in connection with the treatment of the insane. This no doubt is a question with which you are more or less familiar, and during the last few years there has been a decided change in connection with the treatment and care of the insane. We now look on an insane individual as being sick and lend every effort to restore him to his former mental capacity.

The doctor has referred to the necessity of money to accomplish the desired end in hospitals for the insane. It requires not only money, but men who are especially trained and men who are interested in the subject and willing to devote their time to it. The individual who undertakes this work should have some assurance of a remuneration which will warrant him in putting forth his best efforts, as well as some assurance of a permanent position. A physician who takes up hospital work with the expectation of leaving it within a year or two never becomes very efficient; it requires some time to become efficient, and in most cases where men have entered the service they have had no training previous to taking up the work.

The medical schools as a rule offer but little or no clinical advantages for training along the lines of psychiatry. It seems to me, when we consider the large percentage of mentally unbalanced and defective individuals which the physician has to deal with, our schools should offer a thorough course on this subject. The physician then who takes up this work would not be without some knowledge and his services would be of much greater value from the beginning. I should certainly be glad to see our medical schools offer a more thorough course on this subject.

Dr. H. I. Davis:—You have before you now the keeper of the insane of Cook County. The Detention Hospital of Cook County is quite a place, even though Dr. Houston has justly criticized some parts of it. It is considered the second largest institution of its kind in the world. There is a larger one in this country, and that is the psychopathic ward of Bellevue Hospital, which handles 400 patients per year more than we do in Chicago. I presume it will surprise every one of you present, with the exception of Dr. Willhite, who is very much interested in this work, when I tell you that we have had for the past year over 2,000 admissions to the Detention Hospital. The care of the insane is a very important question. You can see what it means to take care of 2,000 insane people, the majority of whom are suffering from acute forms of insanity. Only a short time ago the keeper of this institution had very poor facilities for taking care of these cases. Dr. Houston was not correct in stating to you that certain improvements have been made in the last four months. Improvements have been going on in this institution for years. The present keeper has been engaged in the work only six years, but I hope you will not think he is tooting his own horn when he is stating to you

the facts. Up to six years ago the Detention Hospital of Cook County was what its name implied, namely, it was a home or a detention institution where people were kept, who were alleged to be insane, and kept there until they were brought into court to be tried. Again, this keeper was fortunate enough in having some training in mental diseases years ago, and was one who was fortunate enough during his curriculum at the medical school to be obliged to take a course in psychiatry. He had to take it, and if he had to pass his examinations he knew something about the subject. He soon learned that a detention home was not a place for insane people. We do not look on mental disease as a separate entity. It is virtually a misnomer. Mental diseases are as much true diseases of the body as is cirrhosis of the liver, etc. They are diseases whose most prominent symptoms concern disturbed functions of the cortex of the brain or the general nervous system.

The institution I have charge of was built twenty-three years ago or a little longer. Since that time from 500 to 600 patients per year have gone through the institution. I will say for your information that before this detention hospital was built, alleged insane people were kept in the County Jail on the North Side, in cells, until they were brought into court for a hearing. The Detention Hospital was then built as a home. One physician was in charge of it. There was no medicine chest. There were no trained attendants. At the present time the Detention Hospital is more like a modern hospital for the insane. It has the services of physicians, it has intern service, it has trained nurses, and I think as well-trained attendants as are to be found in any institution. As Dr. Willhite has said, such things cannot be made over night. They cannot be made in a year. It takes time to do these things. It takes time to bring about these reforms and improvements. Even with all the money you may have at your disposal you cannot get a proper hospital for the insane over night. You must build it gradually. You must have attendants and train them gradually, and by holding out proper inducements to them you may keep them and the patients will be properly cared for.

Outside of the trained nurses and interns and private attendants, we have established a hydrotherapeutic apparatus at the Detention Hospital, consisting at present of a couple of continuous baths, modern shower baths, sitz baths, shampoo table, etc., all controlled by apparatus so that the temperature of the water cannot be changed by patients. Very few drugs are used for maniacal patients. The Detention Hospital at the present time is not my desideratum of what an insane institution should be. I take the liberty of going into details for several reasons. Dr. Houston has told you about the present procedure of committing a person who is adjudged insane or alleged to be insane. Dr. Willhite has told you that it was a hardship. It is not right to drag an insane person, a sick person mentally, into court. It stands to reason that a person who is alleged to be insane has not got his mental faculties in the best of condition. You know how hard it is for us to reason sometimes properly while under stress. I am willing to agree with Dr. Willhite that the admission by commitment is the proper procedure, but I will go one step further and say that the commitment of patients by a commission, composed of physicians, is a great improvement over our former methods of dealing with these cases. These men have the right to administer an oath, and they are by law empowered to examine the man or woman who is alleged to be insane and make a report to the judge, and on the strength of the report he orders the commitment of the patient. Who is Judge Rinaker going to appoint on that commission? Dr. Moyer, Dr. Kuh, Dr. Patriek and a few others? Some of you may feel like calling a halt and saying this is another form of graft. These five men are robbing us of our means of support. But why should not Judge Rinaker appoint these gentlemen and nobody else? How many physicians, graduates of our best medical schools, the medical departments of the University of Chicago, the University of Illinois, or the Northwestern, have any working knowledge of psychiatry? How many of you present have taken a course in this branch? Some of you, who went to medical colleges, never heard the subject mentioned. Some medical colleges now make psychiatry an elective course, and when the course is

not elective the students are taken out to Dunning and shown a few patients and their course in psychiatry is over. If we want men who are trained in this branch of medicine we must start at the bottom and give medical students an opportunity to know something about the subject. These gentlemen I have mentioned will make the best safeguard against anybody trying to railroad any person to an insane hospital. It is preposterous to think that such a thing can be done, as Dr. Houston has told you. To do this it would not only require conspiracy on the part of the physician who issues the certificate, and the man who has charge of the Detention Hospital, but it would require conspiracy on the part of the superintendent of the institution to whose care the patient is committed. This superintendent, if he finds the patient is not insane, will discharge him. There is no doubt but that the subject of psychiatry should be taught in our medical schools. I wish to correct Dr. Houston in one statement he made, as this is something he did not know about, and that is during the last three years we have been giving clinics to the junior and senior students in the University of Chicago on patients remaining in the Detention Hospital for any length of time. Our lamented Dr. Brower, Dr. Kuh and other gentlemen as well as myself, have availed ourselves of this opportunity. Classes on psychiatry have been held in the Detention Hospital for four years under the strict supervision of the superintendent, with the consent of the relatives of the patients, and with the consent of the patients themselves. It is just as important from the standpoint of the mental health of the community to have these clinics as it is to have clinics in surgery or gynecology. More members of the profession should interest themselves in the study of this subject so that some measures may be devised or suggested to check the increase of insanity which Dr. Willhite has spoken of. There is a double purpose in this thing. Until we have the general profession trained in psychiatry, the present procedure of the court for the commitment of the insane is the safest one.

Dr. Houston has told you about all the red tape that is required to bring a patient to the Detention Hospital. He has described to you the bringing of a patient to the Detention Hospital, etc. What he has said is true, and it is not true. Since this keeper has been in the Detention Hospital, any patient is accepted at the Detention Hospital at the request of any reputable physician or any police officer.

As to physicians issuing certificates, with all the shortcomings of our physicians in not having a knowledge of psychiatry, I do not believe they would issue a certificate unless they felt positive a patient was insane. The laws of New York demand that the physician who issues a certificate of insanity must have been in good practice for three years, and the Massachusetts law demands five years.

Dr. Willhite has pointed out to you the importance of interrogatories. As you know, in New York and Massachusetts the physician who issues a certificate in any given case of insanity is in duty bound to furnish all this information, and in the state of Massachusetts is liable to a fine not to exceed \$100 if he does not do so.

Dr. James P. Houston (closing the discussion):—I have nothing to add except to reply to Dr. Willhite's point that a case of insanity does not require legal adjudication any more than a case of typhoid fever does. The only reason that can be found for it is that the constitution and our laws are dead against it. Until we change the Federal Constitution and the constitution and laws of this state, and wipe out entirely that fundamental right to life, liberty and property except when legally deprived of same, we must submit to the rules and regulations imposed by our courts. If you will consider the full meaning and bearing of that simple procedure and see where its abolition leads to, I do not think anybody will question at all the advisability of inquests by jury or a commission in cases of insanity.

In reply to Dr. Davis' suggestion that only six physicians whom he named are qualified to serve satisfactorily on a commission, I will say that it is a statutory matter, and that the statutes of the state recognize a physician in regular and

active practice, known to the judge for his ability and for his integrity as thoroughly competent for such service. The statutes do not contemplate any academic discussion as to the patient's sanity or insanity, and they require only that the physician must be one in active practice, capable of deciding from the testimony presented whether or not that patient comes under the provision of the statutes.

OUR RESEARCH WORKERS *

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Without a working hypothesis, which is universal in its application to the phenomena pertaining to the subject matter involved in a science, substantial progress is impossible. Indeed until such hypothesis is established no subject of human investigation ever has or will attain to the dignity of a science.

It is a well known fact that astronomy, perhaps the most exact of the sciences, was before the promulgation of Kepler's laws, little more than a speculation. Every schoolboy remembers the story of Newton and the apple, and understands that the hold taken on his analytical mind by this apparent triviality, resulted in the promulgation of the hypothesis of gravitation, which was to transform astronomy into an exact science.

No less important is the atomic theory to the science of chemistry. Without the atomic theory, chemistry, that marvelously exact science, would to-day be absolutely without a working hypothesis. With it, the well-equipped worker proceeds with all the confidence of the mathematician. Accurately he makes his computations and foretells his results. With a swiftness suggestive of legerdemain, he will produce a harmless gas, a poisonous vapor, an insoluble body or a drop of water as pure and sweet as the crystal stream which broke from the hillside on your boyhood's home, and went rippling away through sunshine and shade on its way to the far off sea.

Yet scientists tell us that the atomic theory, constituting as it does, the basic principle of an exact science, is not demonstrable except by results. It is absolutely impossible to demonstrate the correctness of the abstract theory. The atom, this ultimate unit of matter, is beyond the pale of the human senses. Nor is it probable that scientific skill will ever be able to furnish an instrumental device capable of enabling man to take cognizance of this particle of matter. Nevertheless, its existence while only hypothetical, is absolutely necessary to the explanation of these multitudinous chemical phenomena, so familiar to those skilled in the science.

In the field of medicine, a satisfactory working hypothesis has never been formulated. Many theories have been advanced to account for the various phenomena which have been observed, all of them plausible and satisfactory to their authors, when applied to a certain class of cases, but utterly failing when confronted by another.

* President's address, delivered at the annual meeting of the Æsculapian Society of the Wabash Valley, Oct. 27, 1910.

Thus have the students of medicine been hopelessly divided into schools, which, while not exactly waging war on each other, have been ever willing to vigorously deny the correctness of valuable observations. I cannot refrain from mentioning the will-o'-the-wisps that have blazed in phosphorescent splendor, amid the bewildering darkness by which our science has ever been surrounded. I have the greatest admiration for the men who have followed them in purity of purpose, and unmeasured zeal. One by one you have seen the optimistic advocate of a valueless procedure slowly awakened by the cruel cross-questions of a sane profession, to the realization that the wonderful theory that he held so dear was but an imaginative dream. Yet these are the men who are making of medicine an exact science.

In the history of our profession the attention of the student is not attracted by the masses who make the rank and file of the profession, but by the individuals, who in their boldness and tireless devotion to duty, have towered above the dead level of humanity and have performed deeds or perpetuated principles in our science that stand as milestones along the way.

These are the men that have made medical history. So when we contemplate the investigator, the thinker, we sometimes stand aghast at the havoc wrought by the unfortunate research worker, but we are filled with admiration for the brilliant achievements of those who do not fail. It is not my purpose to wail at the failures along the way, nor to indulge in an optimistic prophesy that medicine will early become an exact science: but an appeal to reason can only convince us that the vast array of painstaking workers, in the various departments of our enormous field of labor, is slowly but certainly leading us into the light.

It ill becomes us to bewail the shortcomings of our profession in years gone by. I have nothing but veneration for the men who labored then, and unblushingly affirm that they made better use of their opportunities and came nearer using all their facilities than do we to-day.

Think of the courage of the Kentuckian, who 101 years ago opened the first abdomen, or of the redoubtable swine gelder, who more than 300 years ago, did the first Cesarean section for the relief of his own wife. After the futile efforts of thirteen barbers and midwives had offered no relief, he operated; and to the glory of his profession and to the encouragement of ours, the patient recovered.

The future acquisitions of surgery will be less of knowledge than of skill. The qualified surgeon of to-day, trained to the hour by a master, drilled to perfection in mechanical manipulation and surgical technic, has not the claim to greatness that had the pioneer, who, regardless of the disadvantages under which he worked, and realizing fully the condemnation under which he would fall, should he fail, went boldly on into fields to him unknown.

Herein has been the glory of our profession, and behold the result, an army of original investigators that would people a city. We should remember in kindness the meteoric career of the man, who after fostering an adolescent dream, lapses into mediocrity. Contemplate the truly

great, whose achievements will stand while humanity endures. Out from the multitude there now and then comes a man who advances the profession a hundred years. Clamoring for recognition, and meriting it, come others in hundreds. Each year there are placed before the readers of our profession over 100 text-books, while there pours from the medical press, 300 medical magazines; and this in spite of the fact that thousands of meritorious articles are yearly consigned to the waste basket for lack of space.

Contemplate this situation. Imagine the predicament of the man ambitious to keep abreast of the times. Not a practitioner in the world has the time, had he the opportunity, or inclination, to even review this bewildering array of valuable literature. The solution? 'It is specialization, early in life, while the student habit is strong. The time of a virile young man should not be lost groping in a field discouragingly broad, but should be concentrated in some one direction. Urge your student to early select his field, then eliminate everything that fails to bear directly on the objective point.

A fallacy of the profession has been, that specialization is the legitimate outgrowth of general practice. Time was when this was true. All honor to the pioneer, self-made specialist. To-day the facilities for special education, not in medicine alone, but in every line of scientific investigation, are such that the student who fails to avail himself thereof, fails to grasp the opportunities that belong to the age.

The laboratory of Woolston, one of the ablest chemists of his day, consisted of two tumblers, a retort and a lamp. Compare this with the equipment of a modern chemical laboratory in any of the leading institutions of the country. There may be found in many of these institutions young girls so versed in microscopy, so drilled in technic, so familiar with bacteriology, that the general practitioner of no more than ordinary training can only stand in awe of her attainments.

There can be no question that the voluminousness to which scientific research has attained, renders the individual who strives for competency in every department, completely overwhelmed. This can be nothing but a mathematical proposition. Men and minds being equal, that man who concentrates his efforts, must early demonstrate his superior usefulness.

Necessity has been called the mother of invention, and danger the mother of wit. What wonder then that primitive man resorted to the invoking of charms when assailed by disease. Quite naturally the incantations of the voodoo doctor were early accompanied by the administration of roots and herbs without knowledge or thought of their physiologic action.

Years after the practice of medicine had emerged into the light of reason, it was chiefly occupied in emergencies, and employed the most primitive methods. Notwithstanding the fact that the doctor has ever been considered a general emergency man, he has always used his best efforts to prevent the requirement of his own services. Is there another man on earth like him? After the emergency has arisen the doctor is eagerly sought, yes importuned. Before the emergency all his efforts

toward the advancement of sanitation, and the limitation of disease, are taken in the light of an uninvited interference.

This is a striking example of the perversity of human nature. The medical profession has been the only persistent foe to disease, the most unselfish advocate of all manner of reforms. Not only an advocate of sanitary reform, but at the risk of public condemnation has it been a vigorous prosecutor. Why is this? It has been called the love of conquest, the joy of battle, the delight a real man takes in a war of extermination on a public pest. Yes, it is more. It is to me an evidence that the man who, day by day, lives near to the people, that the man whose duty takes him into the tender places of society, that the man who stands shoulder to shoulder with a fighting father as he viciously battles for the life of the mother of his helpless babes, learns to instinctively hate the ravages of disease.

Herein is a curious anomaly. The only profession which can profit financially by the existence of disease, waging on every disease-producing organism a war of extermination that has forever closed the mouths of those prone to proclaim that medicine was not a science. The achievement of preventive medicine alone, thanks to bacteriology, has sounded the death-knell of empirical medicine, and has come as the greatest boon to the human family since that starlit night in the years ago when the man child came to redeem the race from moral pestilence.

We as physicians are yearly recognizing our limitations in the matter of drugs, and better appreciating the possibilities of Nature. It is not possible for me to dwell on the achievements of modern medicine. We are equally familiar with these, but I cannot refrain from a tribute to the men who from a pure love of attainment and charity for dying people, have offered their existence on the altars of scientific medicine. Who in the wide world would dare acclaim that medicine was not advancing? Was Pasteur not a scientist? Then by the gods of the deep and the dogs of war, was Columbus not a sailor and Napoleon not a soldier!

The student of medical history cannot fail to be impressed with the monotonous regularity with which one vagary has followed another. So-called schools of medicine existing before the Christian era were founded directly on the personal opinions of individuals. For example the schools of Hippocrates, Plato, and Aristotle.

This condition followed in direct sequence through the subsequent centuries. As late as the eighteenth and nineteenth centuries, were the scientific efforts of medical men so enshrouded by fanciful speculations and alleged personal experiences, that it was practically impossible for the unwary layman to differentiate? What wonder as time went on and the amorphous fund of scientific knowledge took more definite shape, that Eclecticisim, Thompsonianism, Homeopathy, Osteopathy and Christian Science were born and flourished. By the same sequence how can it be that we fail to understand the prosperity of the charlatan?

Familiarity with the psychologic caprices of the laity, render you immune to the vociferous calls of many in the profession, for annihilation of the quack. There will never come a time when the charlatan will

not flourish; and the equanimity with which you behold these questionable transactions, and the charity with which you contemplate the penitent investor in quasi-professional blue sky, will indicate your professional worth. Professional dignity demands that you contemplate in kindness that discouraged individual on whose term of years you have placed an approximate limit. The fact that you have reached your conclusions by scientific deductions, may be very satisfactory to you, but the patient wishes to be cured, and scientific deductions have no place in his mental operations. He will consult the man who will promise him relief.

Nor may we consider the unstable mentality of the suffering layman entirely chargeable to his demand for reassurance. Among our most conservative investigators there are continually arising discrepancies, that to the uninitiated are unexplainable. Twelve months ago we were informed with all the solemnity warranted by the exigencies of the situation, that pellagra was the result of a corn diet. This is not the time nor the place to enumerate the scientific reasons for the generally accepted allegation, except to state that the ground was apparently well taken and from a scientific standpoint well held.

Within the past few weeks there have emanated from some of the insane hospitals, a story of apparently correct experimentation, the statistics of which are so staggering in their effect as to completely overthrow the well-authenticated theory that was threatening the financial ruin of every breakfast-food vender from Santa Monica to Battle Creek.

At the present time good reason exists for the belief that the coexistence of pellagra and insanity is more than a coincidence. Of pellagra we know little and of insanity less. We shout of the achievements of Modern Medicine, and of surgery there remains nothing but the perfection of what already exists, but in the field of psychology we are as much at sea as were Aristotle, Æsculapius, Plato or Galen. We look with pride on the professional achievements of our contemporaries. This is as it should be; but let us contemplate their limitations.

Who has given us a rational definition of insanity? Who has been able to establish the limitation of sanity, or to establish the relationship between the normal brain and the normal mind? What is the mind, normal or otherwise? What is the brain? Is it responsible for, or dependent on life? Less than a week ago I was gratified to hear an alienist of unusual ability frankly state that, "We know as little of the cause of insanity and what it really is to-day as did our predecessors of centuries ago."

With the meager exception of paresis, perhaps, there is to-day no well-defined brain lesion coincident with insanity, while the various degrees of normal mentality, if indeed such a phenomenon exists, are altogether disproportionate to the size, weight, and so-called texture of that mysterious organ, at the origin, purposes, possibilities and maintenance of which, we can only conjecture.

What a field in which to work; and yet to me it appears no more hopeless than the ground already traversed. Through the medium of physiologic chemistry and microscopy, physiology and pathology are now flooded

with light. Observe the truly scientific worker, strong in his conviction, steadfast in his purposes and unerring in his findings. Armed with those instrumental devices, in the technical manipulation of which he is past master, he proceeds with the confidence born of knowledge. Boldly he demonstrates the existence of this micro-organism or that pathologic lesion, and with mathematical precision declares the disease. He confidently makes his blood count, and months ahead forecasts oncoming catastrophe, or dispels from the hearts of anxious friends unmitigated gloom. By therapeutic measures and sound advice he may transform a rapidly failing organism into a useful member of society. Recognizing the etiologic factor of disease, he renders invaluable service to the community in which he works. Like the chemist he is able to proceed with the certainty of result in exact proportion to his knowledge of the principles involved, and his skill in applying them to the work in hand. How seldom does he pause to contemplate the price at which the information has been purchased, or remember the lives that have been sacrificed to scientific medicine.

It is a well-known fact that in time of war, the men in the front rank are the first to fall. How often in scientific research work has the man in the front rank gone down. Volumes have been lost to our profession by the untimely loss of daring men. The yellow fever districts of the sunny south have claimed their own. The plague-swept swamps of darkest Africa hold their victims. The Asiatic cholera districts have taken toll, and heavier than all has been the tribute wrung from the professional world by the great white plague of the frozen northland. But through it all the honest, earnest research worker toils on into the gloom, and as fast as they fall, others snatch from dying hands the lighted torch that will never be extinguished until the mists that enshroud us clear away and the long night ends. Then will the science of medicine come into her own. In the presence of a working hypothesis directly applicable to the facts observed, every investigator must of necessity be able to draw the same conclusion in a given case. Prejudice and passion will cease to sway the minds of medical men and the light of scientific medicine will flood the world.

THERAPEUTIC NIHILISM *

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One of the oft-repeated remarks of the late Dr. H. F. Harper was, that when you hear a physician doubting the effects of his drugs it is a pretty good indication that he does not understand their uses.

In the last decade we have heard quite a good deal of this doubting of drugs and there has been a tendency to therapeutic nihilism, especially in certain diseases. Therapy, as a science, has not kept pace with pathol-

* Read before the Æsculapian Society of the Wabash Valley.

ogy, diagnosis and other branches of medicine, largely due to lack of method that will enable us to place it on the same footing as the other branches.

A large per cent. of the articles in our medical journals give in detail the etiology, pathology and diagnosis of diseases and say but little in regard to treatment, and we have heard the question asked in our own society after hearing able discussions of some disease, except treatment: What will we give? Why this condition?

We know that most of our old standard drugs have been experimented with, both on the human body and that of the lower animals by eminent authorities for ages, and their physiologic effects thoroughly understood. We know to a certainty what effect digitalis will have on the heart, the effect of ergot on the uterus, the effect of the vaso-constrictors; and that we can make the veins stand up like whip-cords with the vaso-dilators, and we are just as sure of alleviating pain with morphin as we administer it. And so on throughout the whole category of our standard drugs.

Of course we have but few specifics. And occasionally an organ is so diseased that it will not respond to treatment, but this is comparatively of rare occurrence. Every human body has its weak points, and when the body is attacked by disease they need stimulating so as to perform their functions. The body may be likened unto a complex piece of machinery; if a loose tap is neglected disaster may be the result. So with the human body. There may be a loose tap here and one there, and drugs are the means, with proper exercise and hygiene, by which they may be tightened.

One of the most potent causes of this doubting is the prominence that surgery has taken in the last two decades. I would not say one word to detract from it; for there is no more commendable and essential work than that of surgery, but I do believe that some of the brilliant and successful achievements of this branch of medicine have diverted the minds, both of the practitioner and medical student, from the more prosaic study of drugs, the implements of every-day use. The bent of the medical student's mind is manifested early in his medical course as shown by the attendance on clinics. The surgical clinic is always well attended while the medical, diseases of children, etc., are often neglected. Especially is this true in regard to hospital clinics. Let the word go around that there is to be a laparotomy or some other major operation performed and they will turn out to a man. Then note the difference when it is announced that Professor So and So will deliver a lecture on nephritis, arteriosclerosis or some other disease that we have to treat almost daily.

So we go through our college course dreaming of the days when we will be a Gross or a Conner and win the plaudits of the laity and our fellow-practitioners, and at the end of our course we feel equal to almost any emergency that may arise in the realms of surgery. But alas! Our dreams are not to be so readily fulfilled and like bubbles in the air we see them burst.

Self-preservation is the first instinct of life, and we find it pretty strongly developed in the human family, and there is a reluctance on the

part of the people to yield to the knife of the amateur. Consequently there is a lack of material, about the only thing that keeps us from donning the surgical gown, going around with sterilized hands and breathing in an aseptic atmosphere, and we have to content ourselves with lancing abscesses and felons, setting an occasional bone and possibly amputating an arm or a leg once every ten or fifteen years. In the meantime reason has begun to dawn and we begin to think after all we do not care so much about it and are ready to turn our cases over to our more fortunate brethren who have work enough of this kind to keep in practice, and we begin to get down to the study of diseases that we have to meet every day and to the physiologic effects of quinin, calomel, etc.; however, often not until we have lost the opportunity for valuable clinical study in these lines.

Another cogent factor in our losing sight of our therapeutics is the pharmaceutical house. A manufacturer of a patent medicine said to me once that the medical profession was dictated to by these houses. I told him that he was mistaken, but in moments of reflection thought his words only too true. They put out preparations with high-sounding names, containing all the way from one to a dozen different drugs, often incompatible, the virtues of which we find on a careful analysis to depend on some standard drug which would be more efficacious administered alone, the true merits of which are often overlooked in these unhomogeneous compounds and attributed to some untried drug of recent origin that is not only worthless but a detriment to the system.

These preparations are put up under names to suit the diseases, as cardiac compounds, uterine sedatives, migraine tablets or any other name that may suit the fancy of the manufacturer. We often in our hurry and rush prescribe them by these names, not giving much thought as to what drugs they contain, otherwise letting the chemist do our therapeutic thinking for us, a person who usually knows nothing of the physiologic effects of drugs from a clinical standpoint. Then their preparations are not always reliable on account of the quantity and quality of drugs put in them. Especially is this true of the elixirs. They are made in large quantities and if kept any length of time, if the drugs are put in them at all they often precipitate and we dispense only the syrup. Tablets are often insoluble and those that have fluidextracts and tinctures in them are unreliable; therefore we lose confidence, but thanks to the pure food law some of these wrongs have been rectified.

Then we do not want to overlook the proprietary man, one of the biggest of empirical grafters. We are apt to fall into the channel of least resistance. Their preparations are so easily prescribed and these people are so persistent and subtle in their advertising that we often prescribe them without due consideration. There is hardly a day but we get literature from them extolling the virtues of their products. Some of them are kind enough to give the formula but the majority expect us not to question what is in them; but just accept their word for it that it is good for such and such diseases, and I am sorry to say, backed by testimonials from hundreds of physicians. Some of them use the profession

as an advertising medium, offering to send a half-dozen bottles for distribution among our patients, provided we have a druggist order one dozen bottles; of course expecting us to write prescriptions for them. As the name is always on the wrapper and blown into the bottle this is the last we see of our patient and the effect the preparation has had on the disease. After a year or two we are somewhat chagrined to see some of these so-called ethical products flagrantly advertised in the daily press.

Another cause of our losing sight of our therapeutics is the different mode of teaching from a few years ago. It is to be lamented that the old style of a student reading under a preceptor is abandoned. There we had to weigh and reweigh drugs, fill prescriptions and get acquainted with all their physical qualities and we saw their clinical applications under an experienced hand. Now a person can go through his entire college course and practice from year to year and never get acquainted with a single drug by sight, taste or smell.

And still another cause is some of the cults and isms which have sprung up in the last few years. Among the most prominent is Christian Science. To be sure it has had but little effect on the progressive physician, but as it relieves some diseases of purely psychical nature it has had considerable effect in prejudicing the people against medicine; often causing the physician no little trouble and worry.

It is a common occurrence if you ask a physician what his treatment is for typhoid fever, that he will reply that he gives nothing only good nursing. I believe this idea is erroneous. I believe that, through the agency of drugs judiciously administered, its course can be largely mitigated, especially if seen early before all the tissues become saturated with the toxins generated by the germs. Not heavy dosing, but just enough of some eliminant, preferably calomel, to throw off the poisonous substances as they are formed and confine the disease to a typical course, three weeks, complications being met as they arise.

Through the agency of the nitrites or other vaso-dilators I believe a large per cent. of our pneumonia cases can be aborted if seen before the lung becomes solidified. If seen later none of us would think of neglecting our supportive and eliminative treatment.

Especially is there a tendency to discard drugs in the treatment of tuberculosis and confine the treatment to fresh air and food. As in typhoid fever there is no specific, but drugs are just as efficacious in conjunction with pure air and food in our efforts to arrest this malady as in other diseases. The respiratory centers want to be stimulated, the circulation wants to be looked after, the kidneys want to perform their function and complications want to be met as they arise. In all cases of tuberculosis and other febrile diseases there is a lack of secretion of digestive fluids; therefore indigestion giving rise to auto-infection which is often mistaken as well as other causes for septic infection from lungs.

About two years ago there appeared in *THE JOURNAL* an article advocating the hypodermic injections of hydrargyrum succinimidum. I hardly believe that this treatment has any direct influence on the bacillus but that the good which arises from it is its power to eliminate these products

of indigestion and toxins; thereby relieving a lot of disagreeable and alarming symptoms. Neither do I believe that this preparation of mercury or mode of administration has any advantage over the bichlorid or any other preparation given by mouth that does not disturb the gastrointestinal tract. Even if the case is beyond all hope of recovery there are a lot of harassing symptoms that can be relieved by drugs. The indigestion can often be relieved by pepsin or some other ferment, the annoying cough relieved by some sedative and in throat complications it may be made possible to take nourishment by the local administration of adrenalin or cocain.

Also some of the unpleasant sequelæ of some of the self-limited diseases incident to childhood can be prevented and the disease confined to its natural course by giving eliminants and freeing the system of malaria and other complications. And can we deny the comfort that drugs will often give in these diseases, as potassium bromid, to relieve the paroxysms of coughing in whooping cough?

Lawson Tate reduced the mortality in peritonitis from 15 to 5 per cent. by the administration of salts. Shall we discard this homely remedy when it has been demonstrated by so eminent authority that 10 per cent. of the lives can be saved from this disease? And where have we a more valuable remedy in treatment of dysentery?

It has been said by some writers that malaria was one of the potent causes of the downfall of the Roman Empire. Is it far-fetched to say that had quinin been known and used in connection with Cæsar's efforts to drain the marshes surrounding Rome the Empire might have been in existence to-day? And yet its administration is often neglected even in malarial districts at the present time.

Perhaps there is no drug that there is so much prejudice against as there is against calomel. And yet where have we a more efficacious drug in the treatment of any disease? Whether we will ever be able to answer the question why it turns the stools green or not, we know it relieves a lot of dangerous and disagreeable symptoms.

Not only do we want to know the good effects of drugs but we want to know the bad effects as well. It is a well-known fact that certain foods are poisonous to some persons. Oysters will throw some into paroxysms of pain, others cannot eat honey and there is a case on record where there was an idiosyncrasy against strawberries in a certain family, and that an officious nurse caused the death of a small child in this family by letting it eat one berry. We are all familiar with the objections people have to taking quinin, the deafness, nervousness, nausea, and the eruption of hives. And I once knew of a patient being almost choked to death on potassium iodid and it remained for a consulting physician to discover the cause. We have all been warned that digitalis is a cumulative drug and of its tetanizing effect on the heart, and have seen minute doses of calomel produce such a state of tenesmus that we had to abandon its use.

So let us not bring drugs into disrepute by not knowing their bad effects as well as their good effects.

DISCUSSION

Dr. W. H. Hoff, Paris, Ill.:—The man who has been in practice for five years and who is a therapeutic nihilist should look to himself and find out what is the matter. The greater the care exercised in the choice and preparation of drugs, the better our therapeutic results. Lack of this care in the choice and preparation of an individual drug, together with improper dosage, will account for many failures to obtain desired results. For example, in gastritis often twenty drops of the tincture *nux vomica* are administered, when 20 minims are intended to be given, simply because some one has forgotten that a drop is not always the same as a minim. Lack of skill and careful attention to details, and not the inefficiency of drugs, are at the bottom of many therapeutic failures.

ANALYTICAL AND MICROSCOPICAL STUDY OF PUS*

JOHN B. BATY, M.D., (1838)

TRANSLATED BY L. J. WILLIEN, M.D.

TERRE HAUTE, IND.

Mr. President and Members of the Æsculapian Society:—Of the many questions on diverse branches of medical sciences, there is always something, even of the past, that has some interesting point. For instance, although it may not interest members of the profession who are disinclined to a retrospective view of subjects which to-day are far beyond the future idealistic of the writer of this thesis read before the faculty of Paris, Dec. 5, 1838, by Dr. John B. Baty, ex-surgeon, intern and laureate.

Literally translated, he begins a dissertation, "What is pus and how is it distinguished from mucus?"

Pus, its chemical analysis shows that it is formed by a number of ingredients. The ones in a state of dissolution and the others in suspension, in which is found water, soluble albumin, extracts of flesh, soluble salts, hydrochlorates of sodium, ammoniate of potassium, earthy insoluble salts, oxid of iron, two fatty matters and fibrin; besides sulphur is discovered in all albuminous liquids. We readily see by this analysis that pus contains all the ingredients of the blood less the coloring matter. The use of the microscope is indispensable for a thorough study of the composition of pus.

The microscopic observation presents a liquid, holding in suspension globules in variable quantities. It is quite easy to separate these globules from the liquid which it contains. For this purpose pus, which is not too thick, is placed on a filter and the separation takes place rapidly of the liquid which passes between it and the globules remaining on deposit.

The serum of pus, under the influence of heat, turns into a coagulum, similar to serum of the blood, and presents, before and after its coagulation, all the characters of albumin. Alike to that of the white of an egg, it assimilates in small globules from 1/400 to 1/500 millimeter diameter. The water which holds in solution this albumin, contains other soluble substances which have already been enumerated. An objection which has always been brought up, as to the proper examination of the pus ingre-

* Read before the Æsculapian Society of the Wabash Valley.

dients, is that it is very difficult to recognize the most characteristic substances when they are mixed, or combined with albumin. The quantity of albumin and the salts contained by the serum of the pus is very variable.

The pus globules have a spheric shape, of about 1/100 millimeter, according to M. Donné. If they are left for a space of several months in a vessel in contact with pus serum, it is found that they persist with their primitive discharge; others dissolve and disappear. They have the globular shape of fibrin and are, in fact, constituted by fibrin. If these globules are placed in water, they swell and there appears on the surface small corpuscles more or less spheric, transparent, analogous to the albuminous globules.

M. Mandl has discovered smaller globules from 1/400 to 1/500 millimeter, alike to those that form albumin while coagulating. Their formation is readily explained. They are due to an insoluble portion of albumin in the pus serum. These albuminous corpuscles have a tendency to reunite, and to amass in larger globules, afterward acting like fibrin. As stated before, the pus globules, when in contact with water, dissociated them and turned them into albumin globules. Here it is work of like manner, but in a contrary sense; they are the albumin globules that reorganize and form the fibrin globules. Who, in fact, does not know that, for animal matter, molecules of the same nature can give rise to very different formations, according to the mode their aggregation is established. The two fatty ingredients discovered in pus by Mr. Bonnet, who calls them fat emulsives, giving the pus a milky aspect, and possessing the character of an emulsion.

If liquid pus is left to itself, the separation of its globules and of its serum are easily observed. The globules settle at the bottom of the vessel, and, although composed of fibrin, they do not unite in clots similar to the fibrin of blood. If the pus is thick and creamy, containing a larger portion of fatty emulsives, the globules remain suspended in the liquid, alike to insoluble powders suspended in an emulsion.

Effusions in the serous cavities indicate the time of their existence. Fibrinous globules float in the serum. These globules similar to those of pus, do not only exist in purulent effusion, but in the serosity (serum), which appears in incipient inflammation of the serous membranes.

Pus is always identical, no matter from what tissue it is produced; it varies only in proportions of diverse substances which it constitutes. If the pus from the liver differs from that of other organs this depends on the mixtures of the detritus of liver tissue or with the bile.

The pus offers quite a different aspect, according to numerous circumstances which accompany this formation. These different appearances of pus are not due to the variable quantity of the globules which it contains, but also to the relative amount of albumin, water, salts and especially fatty emulsives. In the serosity that pours an incipient irritation, we find in the serum of the pus a small proportion of globules of fibrin and very little fatty matter. Examine the pus caused by acute inflammation of the cellular tissue, it is thick and creamy, containing a large quantity

of globules and fatty emulsives. Here the blood is energetically propelled in the inflamed region and despoiled of all its elements for the secretion of pus, and escapes from the sides of the vessel. In effusions of the larger serous cavities, we find a liquid of an entire different aspect. The albumin has assumed a different disposition; one portion is precipitated into membranes becoming adherent to the serous surfaces, becoming vascularized under the influence of the vital forces; and another has amassed itself in grumous deposits; a part of which is entirely dissolved and observed under the form of albuminous globules; a smaller proportion reunites in larger globules forming the ones of pus.

Pus is sometimes adulterated by various substances estranged to it, such liquids as have milk, bile, urine, etc., but blood, through a subacute inflammation, has caused its alteration and is escaped from the blood vessels.

The pus of good quality, the *laudable*, is a white liquid, creamy, opaque, homogeneous, of a peculiar odor, not at all fetid, and of a fadish *taste*, showing acid or alkali reaction. Exposed to the air, it does not retard to become acid; then later follows alkaline reaction. It sends forth ammonia and divulges another change which is important to know, and Mr. Bonnet has called attention to. With the presence of sulphur, which is formed in the pus exposed to the air, hydrosulphate of ammonia is formed which gives it a fetid odor; it is on account of this salt that its contact with lead colors it black. If in a fistula, resulting from vertebral caries, the mucous membrane is found black or similar to gangrene, that is due to the action of hydrosulphate of ammonia on the blood.

The difference between creamy and serous pus is that the latter contains a weak proportion of fatty emulsives. The curds that are seen in tubercular pus, are fibrinous masses. It is of the same composition as the other pus; very few fatty matters exist but an over-excess of hydrochlorate of ammonia.

The difference which separates pus from mucus depends on certain principles which are more mucus in the one than the other. The pus of an abscess can possess all the characters of mucus. We know that at the end of acute pulmonary catarrhs, and from time to time in the run of chronic catarrhs, the sputum becomes purulent; it is because the greater portion of the fatty emulsive which exists normally in the secretion of all the mucous membranes, and find themselves momentarily secreted. It is not of pus which becomes added to the mucus, it is one of the immediate principles common to one and the other that are found secreted in a larger quantity.

Many morbid products, so diverse in appearance, have all this in common, that their immediate principles are found in the blood, and their difference is in the proportion of their principles, in the aptitude of these two organizations and a degree more or less advanced of this organization.

Investigations have been made in view to distinguish pus from mucus.

Darwin upholds that pus and mucus are both soluble in potassa, but water precipitates the dissolution of the first and does not produce

this effect on the second. An indication which has been given for distinguishing it easily, is that the pus acidulates very promptly, which is not the case with mucus. The pus poured into water mixes first and gives it the color of whey; when precipitated to the bottom the stirring loosens the mixture. The mucus, on account of its viscosity, forms a coherent mass, having a tendency to gather in filaments adhering to the walls of the vessel. It is from this character that these two secretions are to be distinguished. I will not mention the numerous works to elucidate this question by noted chemists. Of all these essays there has been nothing left for practice to prove that chemical analysis cannot find in mucus what she distinguishes in the pus, and, if there is a difference between the two liquids, it is simply in the relative proportions of the principles that constitute them. In the past, M. Donn  has sought a difference between the two liquids by the combination of their characters chemically and microscopically; but investigations of this author are not terminated and have not, as yet, given the desirable enlightenment. M. Donn  has found a difference between the vaginal mucus and the pus which accompanies blennorrhagia in women. This last liquid has offered the microscope an animalcule of a certain shape while no traces are found in the vaginal mucus. He has made the same observation and discovered the same animalcules in the pus of chancres at a certain period; but these interesting studies of M. Donn  give us the regret that they have, as yet, not been applied to a larger number of morbid secretions.

The authors who have written on inflammation and abscesses, have contradicted themselves on the theory of the formation of pus. According to some, the pus is primitively formed from solid d bris of organs and of blood accumulated in their tissue as a result of inflammation. The blood proceeds in Nature from the capillary vessels and spreads through the shreds of the tissues, renders them more compact and friable; and the destroyed tissue mixes with the blood and constitutes a pulposus matter, which an ulterior effort converts into pus. Pus deprives little by little the coloring matter of the blood. By this method, obscure enough, by which Dupuytren interprets the formation of pus, is far beyond satisfying all the minds.

Most of the authors consider pus the outcome of a secretion from inflamed tissue. When a spot is the siege of inflammation, the blood accumulates in larger quantities. If the irritation is moderate, it furnishes but serosity. If the inflammation is more active, the blood furnishes more albumin, which coagulates in part, and forms a mass of plastic lymph. At a more advanced degree, the blood is deprived of its elements in other proportions; it provides serum and a considerable amount of its fibrin, and especially fatty matter; a portion of the blood mixes with those products and if the violence which precipitates it were greater, it would only force out the blood, which in other words would be hemorrhage.

In the center of the location where the irritation is the greatest, the pus is found; further around the pus and the albumin concretes itself: then, where the point of inflammation is most feeble, nothing is found but serosity. The plastic lymph secreted upholds the inflammation to a

certain degree and softens the spot where it is in contact with the pus; becomes diffuent and enters into composition of pus by degrees as it is secreted by the inflammation and so on until the abscess breaks or the peripheric portion of this structure is vascularized, and becomes a life tissue; a membrane which envelops the pus and establishes a medium between the matter it contains and the organism of which it makes part.

There are cases where a condition of the blood is perhaps due to the nervous system in permitting it to furnish this plastic lymph which limits the inflammation. It provides pus alone and around the pus a very reddish liquid serosity. Such as we observe in phlegmonous erysipelas.

In cases where the abscess is surrounded by well-organized pyogenic membrane it may be retained in the system a long time. The soluble portions of the pus are easily absorbed; as to insoluble parts, earthy salts, fat and fibrin will resist a long time to its absorption and are rarely transmitted in the torrent of circulation.

This purulent absorption is in no way dangerous. Nevertheless, the action of pus on the system may be very annoying. If it has been exposed to the air it is laden with a certain proportion of hydrosulphate of ammonia; and its absorption, in this case, is no more innocent but becomes a variable toxic, which produces dangerous results and often without cure.

The local action of pus may be injurious to the tissue which it secretes, if the inflammation does not throw a barrier between this liquid and the economy of plastic lymph capable to oppose its action. There are cases where the tissues which furnish the pus cannot be protected by this organizing lymph, but because the inflammation, of which it is the siege, possesses a specific character which does not allow to furnish it, which may be more frequent because it does not possess sufficient vitality for that secretion; this is what we observe in certain rodent ulcers, in caries, or ulcerations of the bone; and in cauterizing the bone in this case, it furnishes a barrier against the action of the pus.

DISCUSSION

Dr. Charles B. Johnson, Champaign, Ill.:—Dr. Willien's revival of this ancient manuscript is of historical interest, reminding us that forty-five years ago we had laudable and damnable pus.

Dr. J. T. Montgomery, Charleston, Ill.:—This paper is both interesting and instructive, showing us for one thing that the medical profession of three-quarters of a century ago, while mistaken in many of its conclusions regarding pus, yet altogether had a greater knowledge of the subject than we would be inclined to give credit for.

THE RECOGNITION OF EXTRA-UTERINE PREGNANCY*

A. MERRILL MILLER, M.D.

DANVILLE, ILL.

The term extra-uterine pregnancy is used as descriptive of a conception and growth of fetus taking place without the uterine cavity. The condition was known and described as early as the eleventh century, but

* Read before the Æsculapian Society of the Wabash Valley.

its pathology and literature have been developed since the first operation by Tait in 1883.

Anatomically it may be divided into the following varieties: 1. Tubal, in which the ovum may be arrested in any position from the ampulla to its uterine extremity. 2. Ovarian,¹ which is so rare that authentic cases number less than a score. The most recent was that of Norris,² reported in August of the last year. 3. Abdominal, both primary and secondary. The former has been demonstrated three times. The last case by Hirst.³

While we know little of its etiology, the clinical manifestations make it of vast importance from a diagnostic and surgical standpoint. Many other theories—peritoneal adhesions, tubal polypi, congenital narrowing, and obstruction by ova—seem to give way to that of Kussmaul, who holds that the condition is due to stricture of the tube. When we recall the physiologic wave-like motion of cilia toward the uterus, it becomes apparent that a stricture interrupting this current may cause lodgment of the fecundated ovum. The power of locomotion given a spermatozoon by virtue of its ever active tail might force it along a reverse current or past a tubal stricture through which the fertilized ovum could not be propelled. Williams⁴ has found microscopic evidence of pre-existing inflammation. Schauta, Kustner, Dührssen believe this to be gonorrheal salpingitis in most cases. It has been frequently observed that periods of sterility precede the occurrence of tubal pregnancy, and the cause of the first is presumptive evidence that a similar event may take place in the opposite tube.

The frequency of ectopic gestation is greater than is usually recognized, and must not be treated as a surgical curiosity. Formad,⁵ quoted by Ashton, estimates 1 per cent.; Noble says 3 or 4 per cent. of abdominal sections are made for this condition. Occasionally an extra-uterine pregnancy is discovered accidentally before symptoms are manifest. In this event only care in palpation will avoid rupture, changing the condition from an innocent pelvic tumor into a surgical emergency.

When the ovum becomes lodged in its passage along the tube there is first hypertrophy, which later gives way to parietal weakness due to intrusion of chorionic villi. This may terminate in rupture or tubal abortion but is accompanied by the same general symptoms. Blood is usually found in the free peritoneal cavity in either event, the quantity varying with the intensity and frequency of the hemorrhage. It sometimes occurs when the pregnancy is in the uterine end of the tube that it may rupture into the uterus. The safest place, because of its confinement, is between the layers of the mesosalpinx—the so-called broad ligament hematocele, which Tait says is always due to ruptured tubal pregnancy. In the event of a rupture into the peritoneal cavity one of three conditions obtains: when not infected, absorption of blood and fetus; the formation

1. Boldt: Arch. of Diagnosis, 1908, p. 39.

2. Norris: Surg. Gyn. and Obs., August, 1909.

3. Hirst, B. C.: Surg., Gyn. and Obs., October 1908.

4. Williams, C. D.: Surg., Gyn. and Obs., 1908, p. 519.

5. Formad quoted by Ashton.

of a lithopedion; or secondary abdominal pregnancy. Werder, Warren, and Reed⁶ report cases successfully removed at term.

In the pre-rupture stage there is secession, delay, or scant menstruation, faintness, and morning sickness. The boring cramp-like pain, mild or severe, is due to peritoneal irritation and tubal distention. Rupture of the tube may occur at any time—perhaps most often between the sixth and eighth weeks. Then the patient's misgiving concerning the above symptoms is usually confirmed. She is apprehensive. Severe cutting abdominal pain with tenderness on pressure in the lower abdomen, corresponding to the point of injury, radiating to the rectum, quickly followed by signs of collapse, justifies her apprehension. The persistent pallor, anxious expression, thirst, profuse clammy perspiration and weak rapid pulse, without fever, in a woman previously well and in the child-bearing period mean ruptured ectopic gestation if they mean anything, and should make the picture complete to the astute diagnostician. There is only a moderate excuse for any man overlooking this combination of symptoms.

The diagnosis of this condition should be made early if we are to spare the patient a profound shock or perhaps lethal hemorrhage. The presence or absence of a menstrual period is only of relative importance. If a woman has suffered from pelvic inflammation, been sterile for a number of years and passes a period without menstruation it should receive more than passing notice from her medical attendant.⁷ If gross error or carelessness can be eliminated there is no reason to believe it occurs less often in the practice of one man than in that of another of the same volume. There is certainly no urgent demand for diagnostic yeast to make the condition comprehensive.

It is especially desirable that extra-uterine be differentiated from a simple abortion, since curettement might easily initiate a final hemorrhage. The clots of a simple miscarriage appear immediately; the pink stains or tar-like discharges of an extra-uterine is due to separation and degeneration of uterine decidua—transformed endometrium—and may not occur for thirty-six hours after the primary concealed hemorrhage. The accident of finding decidual membrane will make the diagnosis absolute.

The local pelvic findings of an abscess or ovarian cyst with twisted pedicle projecting into the pouch of Douglas, may be confusing without an aspirating syringe. Its use is a simple and safe procedure and can be done without an anesthetic. If narcosis is employed especial care must be exercised to avoid rupture in suspected cases. In miscarriage we have only the median tumor—the uterus; whereas in tubal pregnancy there is the median and a second—lateral—enlargement. This mass adjoining the uterus must be treated kindly. It is unsafe to use force or probes or traction forceps, since a careful bimanual will suffice. In a retroverted uterus the hematoma is found anteriorly, and before examination the bladder should be emptied. I think it is impossible, certainly not essential, to differentiate between clots and fluid blood.

6. Reed: Jour. A. M. A., June 20, 1908.

7. Montgomery, E. E.: Keen's Surg., v, 592.

It is unfortunate that the profession entertains widely divergent views as to the necessity and time of surgical interference. The discordant voices are earnest, many of them well informed and speak with the confidence of those who possess a clear interpretation of the confusing emergency. If any truth has been established as a result of a vast clinical experience, it is that *death seldom occurs during the primary hemorrhage*.⁸ Frederick⁹ says that 95 per cent. of the hemorrhages are self limited, and that the gravity of the case must determine the treatment selected. Under the expectant plan, adhesions due to the presence of an infected tube or adjacent coils of intestines and perhaps chronic metritis may be the alternative of an operation. Statistics are variable and often useless. The personnel of those operating is such that they are gathered under widely different conditions. Based on the history and evidence of collapse, the traditions of surgery would indicate an immediate and rational operative procedure. It requires profound convictions to fly in the face of established prejudice, and no plea of expectant watchfulness on the part of an attendant will reestablish a lowered blood-pressure or give color to a blanched cheek after the happy opportunity for interference is gone. There should be a line drawn between conservatism and pernicious death-dealing inactivity.

In any event, from the history and local findings, there will be sufficient evidence to establish a surgical diagnosis; and "pathologic pride" should not persuade idleness till the safety limit is passed. Rapid operating adds but little danger, and, as Jarvin says, if no extra-uterine is found some surgical emergency will be discovered. Schauta says 87 per cent. die without operation, and the mortality is slightly above 5 per cent. in the surgical cases. Without giving statistics to confirm his statement Sittner¹⁰ says better results are obtained if operated on as soon as a diagnosis is made. Ladinski does not favor expectant treatment—which doesn't treat. Oliver¹¹ reports thirty-five consecutive cases operated on without a death. Frankenthal¹² in substance advises operation.

It seems from the above that the question of operating must be decided in the individual patient—and doctor—the only conditions being trained assistants and proper selection as to time and place.

DISCUSSION

Dr. J. T. Montgomery, Charleston, Ill.: I think this paper very worthy of consideration. Many cases of extra-uterine pregnancy are never recognized. I believe that in every case of severe abdominal pain, where there are evidences of concealed hemorrhage, it would be best to make an exploratory incision, as some condition demanding surgical interference will nearly always be found, even though our diagnosis of extra-uterine pregnancy be unfounded. I saw a case about one year ago which was thought to be a simple abortion, but when the patient was

8. Baer: Am. Jour. of Obs., lix, 32.

9. Frederick: Trans. Am. Gyn. Soc., lviii, 20.

10. Sittner: Archiv. f. Gyn., lxiiv, 527.

11. Oliver, James: Lancet, Aug. 22, 1908, p. 527.

12. Frankenthal, L. E.: Personal communication.

placed on the table for a curettage, careful bimanual examination disclosed a tender tumor at one side of the uterus. This was taken for a tubal pregnancy, the abdomen opened, and a dermoid cyst with twisted pedicle found. Here an operation was indicated, although the diagnosis was wrong.

Dr. Luther P. Luckett, Terre Haute, Ind.: The cause of ectopic pregnancy is still in question: whether the result of adhesions, atresia of the tube or many other causes which have been assigned. Some have said that if we cannot diagnose extra-uterine pregnancy we are not up to date. Personally, I believe that no one can invariably recognize these conditions, because there is no symptom, nor any set of symptoms which are conclusive. The pain may be confused with that from appendicitis, vesical or renal calculus: uterine hemorrhages may result from other conditions. Some cases may abort into the uterine cavity, without rupture. As to opening the abdomen in every case where the symptoms simulate those of ectopic pregnancy, is it not better to make repeated careful examinations, and if necessary to explore through the vagina, to determine the cause of the trouble?

Dr. T. C. McCord, Paris, Ill.: I recall a woman, a member of a traveling theatrical troupe, who seemed to have a simple abortion while in Paris, and left the following day for Springfield, Ill., where she was seen by Drs. Kreider and Ryan. This woman finally drifted to New York City, where operation by a well-known surgeon disclosed an ectopic pregnancy, which was unsuspected until operation disclosed the true condition.

Dr. I. L. Firebaugh, Robinson, Ill.: Nearly always in discussions of ectopic pregnancy the rôle of the gonococcus in the etiology is strongly dwelt on. I am no particular friend of this organism, but I believe it is sometimes accused of too much. A farmer living close to our town once killed a sow, in which was found a well-developed pig in the fat of the peritoneal cavity, near one kidney, and I don't believe this sow ever had gonorrhea.

Dr. H. B. Vanatta, Lerna, Ill.: It will be a long time before the last word will have been said regarding ectopic pregnancy. I believe that even the most careful observer may be mistaken in the diagnosis, since so often the physical signs and symptoms are not typical. I remember when Dr. T. N. Rafferty reported several cases of this condition before a meeting of this society a few years ago, that I was under the impression that this was a very rare condition. I now believe we are better diagnosticians, and that the greater our care in examinations, the more common will become our cases of ectopic gestation. I believe that exploratory abdominal section is justifiable, when this condition is strongly suspected.

Dr. T. E. Walton, Danville, Ill.: I know very little of ectopic pregnancy, and if I ever saw a case I failed to recognize it. I believe we do not all see cases alike, even in general practice, and I have often wondered what becomes of those cases which are unrecognized. If ever a case occurred in my practice it was very kindly dealt with by Nature, for I can recall no fatal case where this condition could have been suspected.

Dr. W. S. Jones, Redmond, Ill.: I have seen that Nature has taken care of these cases many times. A negress whom I saw at post mortem had an encysted tubal pregnancy of twenty years duration, the patient having died of lobar pneumonia. Another woman I recall with a supposed simple abortion, later developed symptoms which led to a diagnosis of appendicitis, but when taken to the hospital for operation, a small atrophied fetus was found in the free peritoneal cavity and a placenta which indicated three or four months development was found attached to the cecum and appendix.

Dr. Miller (closing the discussion): It is not reasonable to suppose that the opinions of 100 men will agree on this subject. I feel, however, that we are making progress in our ability to diagnose tubal pregnancy. It was a long while before appendicitis was generally recognized, and it will be some time longer before men in general practice as readily discover ectopic gestation. The question of operating in all suspected cases is under dispute, but I believe that it should be done.

FRACTURE OF THE SKULL*

I. L. FIREBAUGH, M.D.

ROBINSON, ILL.

Fracture of the skull, though comprising less than 3 per cent. of all the fractures of the bones of the body, more than makes up in gravity what it lacks in number. Its treatment is more important than the treatment of all the rest. One may lose a limb or two, and any one of the senses, and make a success in life. Generals Dan Sickles, O. O. Howard and John B. Hood each lost a limb in battle, but it only whetted their appetite for a good fight. Homer and John Milton were both blind. Æsop and Alexander Pope were hunchbacks; yet each of the four will hold a front seat in the Temple of Fame, and not be crowded. Vulcan, the blacksmith of Olympus—I don't know his other name—was crippled in the hip, yet as a worker in iron and all the other metals his fame is secure. The light of his forge can be seen shining yet through 3,000 years of time. Even old Job with all his troubles and all his boils was more than enough for his meddlesome friends, Eliphaz, Bildad and Zophar. They were three men perfect as to the nail, yet without their visit to Job they would be as nameless as the fellows who refused passage with Noah in the Ark, while the Book of Job endures—the beauty of the ages; the primrose of the garden of literature. Of two physicians now living in Chicago, whom it has been my privilege to know, one is entirely blind and the other almost entirely deaf, yet each is a diagnostician and physician almost without a peer in his specialty. Truly the important member lives behind the frontal bone.

Fracture of the skull may be simple, compound or comminuted and may affect any part of the skull, and be of any degree of severity from a mere fissure without wounds of the flesh, to a crushing of the whole head. Scudder says that more than two-thirds of fractures of the vault are associated with fractures of the base, and that 85 per cent. of basic fractures originate in the vault. I doubt very much whether this statement would hold good in the case of children. Fractures of the base involving the ear, pharynx or nose are compound and ought to be classed as such, whether they are compound in the vault or not.

There are some things in surgery more certain than the diagnosis of simple fracture of the vault without depression, without brain symptoms and without a history. Examine the case all over without preconception, exclude opium poisoning, alcoholism, epilepsy and uremia, examining the urine, not forgetting that a man may be drunk and an epileptic and also have a cracked skull. Shave the head if necessary, feel and look carefully for any wound, tender spots, scratches, fissures or depressions, noting carefully all evidences of former injury. Hematoma must not be mistaken for depression which it may resemble very much. The natural curvature of the skull will be a guide. Nor is concussion, that instantaneous unconsciousness following injury of the head in which all memory

* Read before the Æsculapian Society of the Wabash Valley.

of the accident is lost, to be mistaken for compression. Concussion is a sort of surprise or panic of the cells due to jar of the brain as a whole, by which their function is in abeyance for a shorter or longer time, and sometimes entirely destroyed, in which case it ends in death, though it is generally of short duration. The patient is pale with a soft, slow pulse, shallow breathing, vomiting at times. He may rest quietly in bed or may chatter, asking over and over again, "What has happened?" remembering no answers given him.

In compression the face is flushed, the pulse tense and hard, the breathing slow, deep and stertorous. It is the relief train of the center sent out in answer to the signal of distress from a province, wrecked on the way, for the life-giving fluid escapes from a torn vessel and only adds to the trouble by giving more pressure. Unconsciousness is apt to be complete and there is paralysis of one side of the body. It may be instantaneous—then it is due to depression of bone, and it may follow concussion after a lucid interval, or it may merge into concussion without the interval, when it always indicates hemorrhage or the formation of pus in the cranium.

A good history is all important if it can be had. The middle meningeal artery may be torn without any apparent injury to the scalp or bone. The wayfaring man can diagnose most cases of fracture as he runs. Any one can see cerebrospinal fluid, blood or brain tissue when it is escaping from the ears, nose or throat. Any one can stick his finger into a lacerated and crepitating wound of the scalp and skull, but it is not the clean thing.

Any one may even recognize paralysis of one side of the body. Fracture of the vault on one side, hemiplegia on the other, with paralysis of the lower part of the face on the same side as the wound, indicates fracture through the petrous portion of the temporal bone on the side of the wound. Fracture of the vault on one side, followed by hemiplegia on the same side, means rupture of the artery on the other side.

The prognosis grows in gravity from front to back and from vault to base. Lovett and Monroe state that the pupils failed to react in thirty-nine of fifty-three fatal cases of basic fracture, and in only one of twelve cases of recovery from basic fracture. Nichols finds that in fifty-four cases of head injury with non-acting pupils, forty-seven died, and that in the twenty-four cases of basic fracture all were fatal. So the action of the pupils is not without importance in prognosis. Some desperate cases will get well with care and others may die in spite of it.

Treatment: Simple fractures without depression and without brain symptoms should be placed in bed and watched. Elevate the head as concussion passes off. It may prevent the case from slipping into the operative class, by preventing hemorrhage. The rule is, no external wounds, no brain symptoms, no operation.

Lejars says: "Whatever may be the result of the first examination, unless a considerable depression exists over the Rolandic area, there is no indication for immediate operative treatment but a careful watch must be kept." He goes on to say: "It is none the less true that if the condi-

tions permit of its being done well, the immediate opening of the seat of fracture, and elevation or extraction of the depressed fragments, is the ideal treatment." Senn says: "The surgeon who converts a closed fracture of the skull into an open one without adequate cause, assumes a great responsibility." He would not operate for prophylactic purposes unless there is marked depression and then not in children.

Fractures through the base involving the nose, pharynx and ear are not operable, unless there is some other indication. Mop the ear out frequently with some antiseptic and pack lightly with sterile gauze. Never use a syringe. Spray the nose and throat often with some mild antiseptic. Apply ice-bags to the head if it is thought best.

Before proceeding to examine a wound of the scalp shave the head, cleanse with soap and water, alcohol and hot normal salt solution. Wash the hands thoroughly, and then and *not till then*, proceed to the examination, cutting away the ragged and dirty edges, enlarging the wound if necessary. Remove all foreign matter with mop and wash with normal salt solution, cleansing the wound thoroughly. Then examine the bone, enlarging the wound if necessary. If it is a fissure, clean, closed, without hemorrhage and without brain symptoms, without depression, clean wound and close with drainage. If it is a fissure open, bleeding, with hair or dirt sticking in the fissure, open up with chisel and mallet, or trephine or rongeur forceps or burr. Remove all fragments, all depressions, take up all arteries and everything else that bleeds. If there is a clot there, turn it out before tying the artery. A hole in the sinus may be stitched, packed with gauze or ligated through the dura with a needle and ligature, but the best way to treat it is to pack the sinus full of catgut, as it is absorbed and leaves the sinus open. Then if all is well, drain and close.

In case the pressure is deeper, the dura will press into the wound and will look dark and show no pulsation. In that case incise the dura, turn out the clot, tie the vessels, drain and close. In case it is deeper yet the brain will bulge into the opening, through the hole in the dura and be without pulsation. In that case the clot is in the brain and will have to be reached through the brain. All bleeding can generally be checked by ligature, artery forceps or packing with gauze.

In case of failure where arterial blood continues to flow and cannot be reached as above, tie the external carotid artery. Hemorrhage from the diploe can be controlled by pinching the bone with forceps or by plugging. When the hemorrhage is on the other side of the brain from the wound, open the wound just as before, clean to the bottom, and if there is nothing there trephine on the other side, treating all wounds as before. In case there is no external injury and there is unmistakable pressure increasing, the brain will tell where to operate.

In gunshot wounds open up the wound, remove all débris of every kind and examine the head thoroughly outside. If the bullet has gone through, dress both wounds, remove what scales can be reached and drain. If the bullet is in the skull, get it if it is close and can be reached handily, but do not search for it. It will do more harm than good. Leave it to

be located with the *x*-ray, if necessary. Drain after cleansing, not too deep, and watch.

Sepsis: In case of neglected fractures where there is sepsis, open the wound, open up the bone, and if that is clean, remove débris and dress with drainage. If the sepsis is under the dura it will bulge into the wound as before without pulsation. Incise, cleanse and drain. Now if there is abscess in the brain deeper than the dura, incise through a convolution, cleanse, drain and watch. The only difference between operating in simple and compound fracture, is the incision of the scalp, which may be left to the judgment of the surgeon.

DISCUSSION

Dr. W. K. Newcomb, Champaign, Ill.: There are some striking points in connection with fractures of the skull. Sometimes the extent of the apparent fracture gives little clue to the actual damage done to the underlying tissues. I have seen cases in which the injury seemed so serious as to preclude any chance for recovery, get well without any after-effects whatever; and then again I have seen those with little apparent injury, steadily progress to a fatal termination.

It has always seemed to me that there was some relation between the period of primary unconsciousness and the ultimate result. In other words, if the patient remains unconscious for twelve hours or more, death very commonly follows. In contradistinction to this, however, I once saw a young man who had been thrown from a wagon, with fracture of the vault, and possibly of the base as well, who recovered after remaining unconscious for six days.

Dr. Firebaugh (in closing): I might mention the case of a man seen a few years ago, who was struck over the ear by a freight car. He was in the hospital a few days with little evidence of severe injury. He left the hospital, but returned within five or six days, became rapidly unconscious and died. Autopsy showed a fracture of the base of the skull, with an abscess of the brain, neither of which had been suspected.

SURGICAL ASPECTS OF HERNIA*

H. N. RAFFERTY, M.D.

ROBINSON, ILL.

In selecting a title for this paper, "surgical" aspects of hernia, we are granting that there are other, or non-surgical, considerations of these conditions, and it is to these latter that we wish to briefly refer at the outset. The first in this category which comes to the mind of all, no doubt, is the successful treatment and cure of most of the cases of inguinal hernia in infants and young children by means of some form of truss. In children under 1 year, I have seldom seen failure follow the proper use of the truss, and only recently I have seen a case of congenital hydrocele in a 3-months-old babe, in which neglect would probably have allowed bowel or omentum to come down, promptly cured by a well-fitting truss worn for six months.

Among other types of hernia in which non-surgical treatment is justifiable, are those occurring in well-to-do persons of rather sedentary habits,

* Read before the Æsculapian Society of the Wabash Valley.

for whom a truss will afford proper retention; in persons afflicted with active syphilis or advanced incurable general disease; and in the aged, although we are fast learning that our grandfathers and grandmothers, and even our great-grandparents withstand legitimate and conservative operative procedures exceedingly well.

Granting the exceptions mentioned above, I feel free to state that practically all other types and conditions of hernia are primarily surgical ones, and deserving of the best operative technic in their management. To begin with, one should never forget that every herniotomy and every operation for radical cure, no matter how simple, is an abdominal section, and well worth the respect due to such. It has been well said that "hernia is a disease, rather than an accident." In other words, it is due to a congenital defect, such as an open funicular process of peritoneum, or an abnormal size of some normal opening in the abdominal wall.

It is estimated that out of every 100 herniæ, eighty-four are inguinal, ten are femoral and five umbilical. Composing the remaining 1 per cent. are the more or less rare types, such as the ventral, obturator, ischiatic, pelvic, lumbar, diaphragmatic, the various forms of retroperitoneal hernia, and hernia into the umbilical cord. The oblique inguinal herniæ comprise the greater number of cases coming to the surgeon, both of the strangulated and the non-strangulated.

In 1893, Coley stated that in his opinion radical operations for hernia would stand or fall accordingly as they would fulfil two conditions (except in cases of emergency), viz., first, a mortality either *nil* or not greater than would be associated with the condition if operation were not done; and second, a reasonable hope of permanent cure. That surgical progress since 1893 has been such as to build even a better foundation than that demanded by Coley at that time, for the operation for the radical cure of hernia, it is hardly necessary to state, for under present conditions the mortality is practically *nil*, while the prospect of permanent cure, instead of being reasonable, is almost certain.

Entering somewhat into details, we find that for preparatory disinfection of the field of operation, soap and water, Harrington's solution and iodine are ideal. For suture material, Lukens' tanned catgut (twenty-day) or kangaroo tendon are usually reliable, and free from the embarrassing after-troubles encountered when some unabsorbable material is used.

In operating for radical cure on non-strangulated inguinal hernia, I believe quick convalescence and permanent cure are to be secured not so much by the choice of any particular method of operating as by a rigid asepsis, careful dry-gauze dissection of the sac and complete removal of the same, together with minimum tissue damage, complete hemostasis and skilful administration of the anesthetic. However, it is generally conceded that the Bassini method has given the largest percentage of permanent cures, due to the thorough removal of the sac flush with the peritoneal cavity, and in most cases to transplantation of the cord. This latter step at first seemed unnecessary in children, but is now considered to offer a slight advantage in both adults and children.

Transplantation of the cord has been of great advantage in the direct herniæ, where it seems essential to success. On the other hand, in cases of oblique hernia associated with undescended testicle, it is very apparent that transplantation of the cord should be omitted, in order to obtain greater length of the cord and thus facilitate placing of the ectopic testis in its scrotal cavity.

In operating for undescended or mal-descended testicle, one should always look for a hernial sac, as it is generally believed that such a sac is present in practically all cases. In operating on an inguinal hernia complicated by undescended testicle, always have, if possible, the patient's consent to remove the testicle, providing you cannot secure enough length of cord to place the testicle in the scrotum, after the ingenious method devised by Bevan. However, the testicle should be preserved when possible, for even though it may have no functional value, it may have a marked influence on the general health and virility of the patient. In this connection it may be mentioned that Coley reports an interesting case of undescended testicle in a man 25 years of age, who had been subject to epileptic seizures every week or two since childhood. The cord was freed and the testis placed in the scrotum, and in the five years following the operation the man had never had an epileptic seizure. As a final word of warning, let me caution you not to remove even the most ectopic and atrophied testicle unless the patient's consent has been given, as one of the queer things in human nature is that the average man would prefer a recurrence of his hernia, rather than to become a monorehis.

In practically all varieties of hernia there is one common feature—the sac—although under certain conditions it may be incomplete, as in the so-called sliding hernia of the cecum or sigmoid. In these cases the sac is distinct anteriorly, but posteriorly is continuous with the anterior surface of the cecum or sigmoid.

In hernia of the bladder, the sac may also be incomplete, depending on whether it is an extra-peritoneal or intra-peritoneal portion of bladder wall which is involved. I well remember hearing Professor Keen say, in his clinic at Jefferson twelve years ago, to always be on the watch for a hernia of the bladder into a hernial sac, and how careful this operator was to eliminate this condition before proceeding further when suspicious of its existence. DaCosta says he has been so unfortunate as to open the bladder on one occasion. It is well to remember also the frequent presence of an ovary, uterus and tube, appendix, or even the ureter, any of which may demand attention when least expected.

A case of apparent absence of the sac was seen by us in February, 1907, in a strangulated oblique inguinal hernia occurring in a 5-months-old babe. This was a case seen in consultation with Dr. Midgett, then of Flat Rock, Ill., and was operated on in the night by the light of a coal-oil lamp. I had always before encountered a more or less distinct sac, and a collection of serum in cases in which strangulation had existed for any length of time, and in this case had extended the incision into the

lumen of the distended strangulated bowel before I became convinced of the practical absence of a sac. This apparently inexcusable mistake proved of no serious consequence, as perfect recovery followed closure of the gut wound with two rows of Lembert sutures. This apparent absence of sac might be explained in two ways: first, that the very thin peritoneal covering had ruptured at the internal ring, allowing the contents to escape into the canal and through the external ring uncovered; and second, that there might have been an adhesive inflammation between the portion of the peritoneum originally forming the sac, and the wall of the intestine. A hernial sac may vary in size from a fusiform protrusion no larger than a pencil, to an enormous pouch containing most of the abdominal contents.

We operated on a strangulated scrotal hernia at Birds, Ill., last winter, which was at least as large as a loaf of bread, so distended as to entirely efface the penis from the landscape, and in which there were 30 inches of small intestine.

There has been much difference of opinion as to what structure most often forms the constriction in strangulated hernia, it now being thought to be more often at the external ring than at the neck of the sac. An exception to both of these usual points of constriction was seen in January of this year, when, in operating on a man aged 85 years we found the strangulation due to a transverse band which extended across the cavity of the sac, the result of an adhesion following a herniotomy done six years previously. This case is mentioned chiefly as an example of the danger of attempting to reduce an incarcerated hernia "en masse" by taxis, or in returning the contents of the sac to the abdominal cavity, without opening the sac, in case of operation.

Among the rare forms of hernia, might be mentioned congenital hernia into the umbilical cord. The fact that this is an extremely rare type leads me to report a case which came under my observation eight years ago. I attended Mrs. T. P. W., Oct. 7, 1902, in what was probably a normal labor, the child being born on my arrival at the house. This was their second child, the first living and being well developed. The parents were not related. This babe had a very large hernia into the cord (hernia funiculi umbilici), which, as the covering was thin, could be seen to contain bowel, omentum and what seemed to be the liver. There was no obstruction or strangulation of the bowel. The parents refused to consider operation and the child died on the fifth day, following which an autopsy was not allowed. According to Lindfors this condition is due to an imperfect agglutination of the visceral plates in the region of the umbilicus during fetal life, more closely resembling ectopia of the bladder than true hernia. He further says that he has found record of but one case in 5,184 cases of hernia, while at the Hospital for Ruptured and Crippled, New York, Coley has seen but four cases in 75,000 cases of hernia observed during a period of eighteen years.

In conclusion, I would say that you will not have far to go in your search for an excuse for finding two papers on the subject of hernia on a short afternoon's program, if you stop but a moment to consider how prevalent these conditions have been, are, and no doubt will continue to be, in all communities and among all classes; what a large proportion of both our rural and urban population, otherwise perfect specimens of physical manhood and womanhood, are to be classed as "unsound," and many not even as "serviceably sound," on account of the existence of a so-called "rupture."

Then again, if one but considers that, in the hands of skilled operators, the mortality (except in cases of neglect) may be represented by 0.2 per cent, and the liability to recurrence by 0.7 per cent., which in the hands of the average operator should mean not more than one death and ten recurrences in 100 cases operated on—I say if one but reviews all these points, it is easy to see that many of us should be divorced from that "vampire," "indifference to modern surgery," that some should cease flirting with various "surgical affinities," and that all should begin to honestly woo the good old every-day surgery of "Hernia."

DISCUSSION OF PAPERS OF DRS. WEINSTEIN AND RAFFERTY (JOINTLY)

J. T. Montgomery, M.D., Charleston, Ill.: I think this important subject of hernia is entitled to much discussion. Hernia is generally neglected. One would be surprised to find how many trusses are worn, many of which have been fitted by some druggist without the patient consulting a physician. Every truss is an inconvenience and the hernia patients should be convinced that the operative treatment is better. The danger is so little that it is not to be compared to the danger and worry of a truss.

Dr. Charles B. Johnson, Champaign, Ill.: A leading surgeon of my acquaintance in Chicago wears a truss. He evidently does not believe that every hernia should be operated on.

Dr. L. J. Willien, Terre Haute, Ind., asked what had been the experience of the members regarding local anesthesia for hernia operations.

Dr. Stephen C. Glidden, Danville, Ill.: I have had the chance to observe the advantages of local anesthesia in a recent series of cases, in which I have used novocain, preceded by a hypodermic of morphia for the quieting effect on the nervous system. The results in these cases have been very pleasing. I would suggest its being given consideration by those of us doing this class of work.

Dr. Roland Hazen, Paris, Ill.: I have used local anesthesia in a number of hernia operations with the best results, doing away with much of the dread of the operation on the part of the patient, with postoperative nausea and vomiting, and the consequent strain on the sutures.

Dr. Rafferty (in closing): I have never had occasion to use local anesthesia, but it is certainly worthy of consideration in those to whom the administration of a general anesthetic would prove too much of an added burden, and this applies especially to neglected strangulated hernia, in which we sometimes find the patient *in extremis* and yet deserving of what remaining chance there is. In the case of the old man aged 85 years, mentioned in the paper, ether was given by the drop method, with no bad results whatever. In reply to Dr. Johnson, you will remember that I did not advise operation in every case, but nevertheless the thought struck me that perhaps Dr. Johnson's surgeon-friend in Chicago might be like the temperance lecturer who carries a bottle of whisky in his hip-pocket.

ANEURYSM OF THE AORTA; REPORT OF CASE *

CHARLES N. COMBS, M.D.

TERRE HAUTE, IND.

This case of aortic aneurysm is reported for two reasons: 1. Aneurysm of the inferior portion of the arch and the descending thoracic aorta is a rare variety and a museum specimen of it is not common. Death by rupture into the esophagus adds to its unusual features. 2. As an occasion for a preachment from Osler found in his article on "Aneurysm" in Modern Medicine.

The patient, Mrs. C., aged 40 years, consulted me in December, 1909, complaining of lancinating pains in left shoulder and neck. She also had an intermittent aphonia and had just been discharged from the hospital as an incurable case of hysterical aphonia, the diagnosis being based on the fact that at times her voice was natural. She had been examined by several physicians and no two had agreed on the nature of her case. Being inclined to rather undervalue her statement concerning the degree of pain experienced, I fell into the same trap with the other physicians, and made no thorough physical examination. As the case progressed the pain, aphonia, cough, dyspnea, vertigo and dysphagia were inexplicable, until one day I unaccountably compared the radial pulse on either side. A pronounced disparity in volume and a retardation on left side flashed the news to my intelligence that it might be an aneurysm with pressure symptoms.

The ensuing physical examination disclosed an area of dullness corresponding to the last portion of the arch and the descending thoracic aorta, while a fluoroscopic search detected a shadow not at variance with the percussion outlines. The classic symptom of tracheal tugging was perceptible.

The usual luetic etiology was ascertained in this case, and under large doses of potassium iodid and morphin she failed to improve. By February, 1910, the persistent cough, hoarseness, rapid breathing, afternoon fever 101 to 103, left thoracic dullness and slight hemoptysis presented a picture which would pass anywhere clinically for advanced pulmonary tuberculosis. On March 5, 1910, after a period of intense pain with every effort to swallow even water, she suddenly had a gush of blood from the mouth and she was garnered by the Grim Reaper.

The specimen eloquently expounds the symptoms.

1. The tumor pressure on the left recurrent laryngeal nerve caused the voice alteration and brassy cough. In the early stages on change of position the pressure was relieved, her voice returned and thus it was that she was thought hysterical.

2. Pressure on the esophagus caused the dysphagia.

3. Pressure on the bronchus caused the dyspnea.

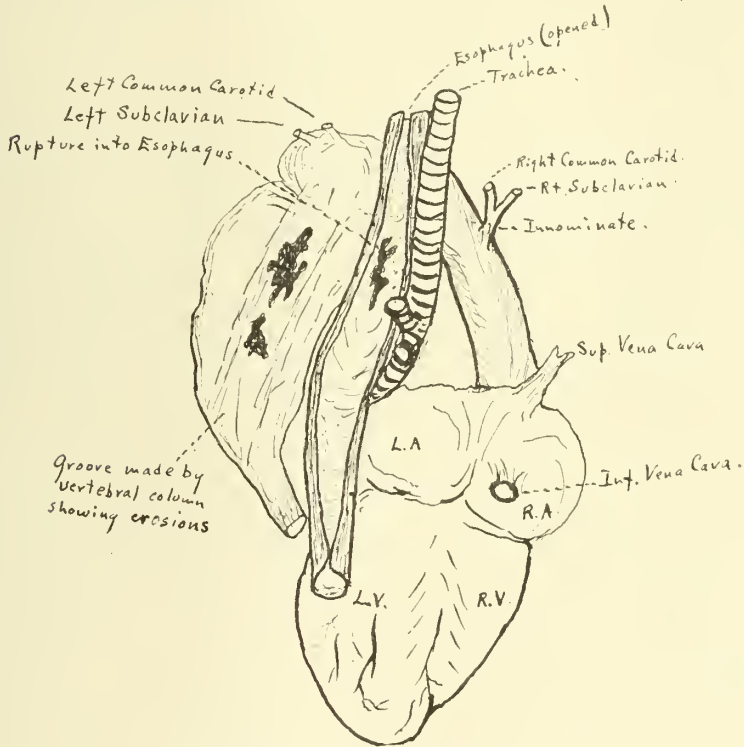
4. The weak left radial pulse was due to the oblique course of the left subclavian through the thickened aortic wall, and the expansion following the ventricular systole partially closed its lumen.

5. Pain was due to erosion of the vertebræ and also to tumor pressure in general. Had death been delayed the erosion would soon have reached the spinal cord and produced the final symptom of paraplegia. The first sign thought of in connection with aortic aneurysm is the pointing or protruding pulsating tumor. When this occurs it reveals at once the condition. In this case, however, the diagnosis was especially difficult

* Read before the Æsculapian Society of the Wabash Valley.

because on inspection no tumor was in evidence. That rupture of the sac into the esophagus caused the immediate death cannot be denied in view of the large irregular opening.

The beforementioned sermonette is on a text taken from Jenner: "More mistakes are made by not looking than by not knowing." What advice more practical could be given the general practitioner? It may serve also to comfort us average men since it indicates that a moderate wisdom faithfully and thoroughly applied bears more diagnostic fruit than the amazing erudition which we have sometimes seen associated with clumsy fingers and a hasty judgment. Says Osler: "I have on several



POSTERIOR VIEW OF ANEURYSM

occasions missed the diagnosis by carelessness in the routine examination. More than once it has happened in my experience to have the sought for diagnosis stare at the astonished doctor from the first or second interspace or the supraclavicular region. There is no disease more conducive to clinical humility than aneurysm of the aorta. Mistakes occur with the most careful and the most skilful. Sometimes the diagnosis is beyond our art; more often it is not made because of the carelessness that so easily besets us in our work. The confession of the great Pirogoff always seems to me most touching: 'There are in everyone's practice moments in which his vision is holden, so that even an experienced man cannot see

what is nevertheless perfectly clear, at least I have noticed this in my own case. An overweening self-confidence and preconceived opinion, rarely a weariness, are the causes of these astonishing mistakes.' ”

DISCUSSION

Dr. W. K. Newcomb, Champaign, Ill.:—The report of this instructive case teaches us that it is not so much lack of skill as lack of care which leads us to our many diagnostic mistakes.

THE ADVANTAGES OF CLINICAL HISTORY WRITING *

B. V. CAFFEE, M.D.

TERRE HAUTE, IND.

There are probably few physicians who have not been much mortified at times by being obliged to ask some patient, who has returned to his care after a long period of absence, the symptoms of which he was complaining when he first consulted the physician. If the direct question has not been asked, perhaps the doctor has contented himself with asking leading questions hoping that a clue will be furnished which will “jog” his errant memory. Whichever course is pursued, the patient readily sees that the details of his case have slipped from the medical man’s knowledge, and that what has been so all-important to him has apparently, at least, made little impression on the one to whom he has intended to place the care of his one most precious possession, his health.

To those of us who have gone through this unpleasant experience—and who has not—the contrast furnished when he is able to take from his desk a concise and complete history of the patient’s illness and his treatment and in a few moments’ time show the patient that he still has a complete knowledge of his condition as it was at the time of the previous consultation, is so great that after he has once taken up the practice of history writing it is very probable that he will continue it; and instead of limiting it to a few of his most important cases, will gradually extend it to embrace all except the most trivial and inconsequential.

As he proceeds with the practice, the advantages become more and more apparent. After a few years he finds that the knowledge of the symptoms of one sickness throws a great light, if properly recorded, on a more severe illness occurring years after: for example, a simple cold, a bronchitis, an attack of real or supposed “grippe,” a mild pleurisy, may be of great value in tracing the etiology and incidence of an incipient tuberculosis; or as the histories of the various members of the family, if more than one have been affected, may show predisposition to some disease of which the beginning signs are too vague and indefinite standing by themselves to arouse the suspicion of the consultant. How often are we puzzled over some obscure case where the symptoms may seem to apply with about equal aptitude to several possible diagnoses. In these it is an

* Read before the Æsculapian Society of the Wabash Valley.

excellent plan, though by no means a new one, to set down in parallel columns the various possible diagnoses and under each the various reasons for and against each one. In this way a better conclusion can be reached as to the relative probability of each diagnosis; then as the case progresses a retrospective view of the claims of each as shown in the chart is very instructive.

An excellent illustration of the great value of case history keeping by the ordinary practitioner in the small town or country, if done well and thoroughly, is seen in the recent account of the epidemic of acute anterior poliomyelitis in York, Neb. This epidemic, though occurring as it did in a relatively small community, was of world wide importance; and the report of its cases and their history has gone far toward proving the contagiousness of the disease; yet the accuracy of the conclusions in regard to it rest on the faithfulness with which the various observers in this community have kept records of the cases, and the report has been much curtailed in fulness on account of the fact that in many instances no records whatever had been preserved.

One of the most essential features of a good medical society meeting is the careful and systematic presentation of case history reports bearing on the subject under discussion. This is only possible where written records have been preserved.

A very practical point is the value that proper records have in medico-legal relations; doubtless many of you can recall instances where the ability or inability of a physician to testify as to the exact condition of an injured man, to the details of a surgical operation, or to the frequency of the dressings of a fracture, have decided the findings of the jury.

The greatest advantage of the practice, however, has yet to be stated. It is this: a history properly taken is one that is systematically taken, beginning with the family history, the etiology, the pathology, as far as it is known, and goes in regular sequence through all the various symptoms and signs to the treatment, prognosis and conclusion. It is not the history itself that is of the greatest value, it is rather a means to an end. It is the cultivation of a systematic, painstaking, thorough-going habit of examination and of thought that is the real goal. No doubt the objection will be made, that while that is all very well for the man who is working in an institution, an intern in a hospital, or a specialist in an office with no long calls, no night work, and no great press of business, for the country doctor or the man in general practice in a small town or city, it is unpractical; that it takes too much time, is too much like clerical work; that time which could be better spent in study had been wasted. No doubt if the busy practitioner attempted to make a complete history of every patient, all these objections would hold good. I think it is a mistake for even the beginner just out of college to attempt to write a history of every case; the drudgery involved would soon sicken him, dampen his enthusiasm and as a result he will do the worst possible thing—give it all up in disgust.

If on the other hand he will begin with only the more important ones, especially those involving doubt in diagnosis, and will make a careful study of these, the value of the work will be so impressed on him that he will find as time goes on he is making ever a larger proposition of his histories, written records; and he will derive more and more value from them and from the habit which their taking has involved.

Instead of being impractical for the average general practitioner, the family doctor, it is on the contrary for him of all others the most practical. Who else is situated so well to know all the details of the family history which are of such great importance in deciding many of the important questions of diagnosis and prognosis? Who else can know so well the surroundings and environment of his patient, his habits, his peculiarities, his idiosyncrasies? The intern or the specialist may be forced to depend on the statements of the patient only, which in health may be untrustworthy, in sickness far more so.

As to the objection that time is too valuable and that too much is consumed, this answer can be made: The time taken in obtaining the history does not enter into the consideration at all; that will be done well or poorly just in proportion as the physician does his other work well or poorly. The actual writing of the first complete history of the patient need not consume more than five minutes; the little jotted memoranda, on each succeeding day, no longer than the writing of a prescription. Surely there are few physicians in general practice who see so many new patients each day that five minutes cannot be spared for recording the history of the more important and difficult cases.

Perhaps some who have read the advertisements for various "Physicians' Systems" of case histories and accounts, and the prices ranging from \$50 to \$200, will be deterred on account of expense. The only real necessary expense is just 50 cents for the beginning: a hundred blank cards and a card index placed in an empty drawer or box. That is all that is essential. There is no question, however, that these systems are of great utility and convenience.

Many American physicians have testified to the great value to them of the habit of history writing; one of our greatest living clinicians has said that it above all other things has helped him to success.

It has been said of Dr. George Carpenter of England, the eminent pediatrician, in reviewing his life:

"It is the testimony of his friends, that the salient features of his character were his enthusiasm and his scrupulous attention to detail; one of his friends writes that he cannot recall a single instance of a patient examined by Dr. Carpenter in whom a lesion had been overlooked, to be discovered by a subsequent examination by another observer. He was accustomed to take copious notes of his observations and the results of the examinations of patients at their bedsides, and as a result, he became a clinician of the first order. His life and example are a great asset to pediatrics in Great Britain and America."

DISCUSSION

Dr. C. F. Newcomb, Champaign, Ill.:—This paper given us by Dr. Caffee reminds us that we should always file some notes on our cases so that we can refer to them later, as the occasion may arise. Some may have the idea that it would be necessary to purchase some expensive filing system in order to do this, but this is entirely wrong, as a few cards, indexed and printed to suit the individual clinician, and almost any sort of a drawer or box in which to preserve the same, form a very serviceable yet inexpensive outfit.

Dr. J. T. Montgomery, Charleston, Ill.:—I believe the keeping of case records makes us more careful about the examination of our patients. Again, if you have a record of a given case, you can at once refer to it to know what you have prescribed for the patient at a previous visit and why. We have now many fads and "pathies" confronting us, but in one respect the regular profession has an advantage over all, and that is our ability to diagnose disease. If care is exercised in the examination of patients, and in a proper recording of our findings, we shall always be able to combat these fads.

RECENT CONTRIBUTIONS TO OUR KNOWLEDGE CONCERNING SYMPATHETIC OPHTHALMIA *

E. V. L. BROWN, M.D.

CHICAGO

The true nature of sympathetic inflammation of the eye has always been and still remains a great unsolved mystery. It must be at once confessed that we do not know the organism causing the disease, whether it is a wound or some other peculiar insult which starts the trouble in the first eye, or exactly how it gets from one eye to the other; even when the disease is fully established in the second eye we cannot make a differential diagnosis by the most careful examination unless we have the history of the trouble in the other eye, and then our "diagnosis is at best only a probable one." The appearances of the eye in sympathetic inflammation are in no wise peculiar or distinctive, but usually quite identical with forms of disease produced by syphilis and tuberculosis. Lastly, we are often powerless to stop the progress of the disease even by the early sacrifice of the offending eye.

It is then a matter of congratulation that definite progress is being made along certain lines. First, it has been established that the disease produces certain well characterized changes in the primary eye. We are indebted to Fuchs for this discovery; Schirmer had previously described the same findings in less detail as inconstant, and other reporters had noted certain features of the changes in their cases. But it remained for Professor Fuchs to finally establish the anatomic basis of the disease and its constancy. As now understood the morbid process consists of a diffuse infiltration of the uveal tract with round cells accompanied by proliferation of epithelioid cells and giant cells. The iris, ciliary body and chorioidea are thickened either very uniformly throughout or by a very

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characteristic node formation as in miliary tuberculosis. It is very significant that the uvea between the nodes may be entirely healthy and free from infiltration. This would lead one to believe that the disease does not progress from one part of the eye to another by direct continuity of tissue but in some other way. A third feature is the origin and full development of the process within the uvea and not upon its surfaces. It comes to a full expression long before it breaks through the confines of the uvea. This finding is very important because it enables us in a given specimen to easily rule out ordinary inflammatory processes. These are largely fibrino-plastic and suppurative in character and come to most marked expression upon the surfaces of the uvea and not within its confines. The sympathetic process is in reality a granulomatous infiltration inside the uvea. It is chronic in character, while these other processes are acute. Sympathetic inflammation is then more like syphilitic and tuberculous uveitis but lacks necrosis and caseation and does not quickly extend beyond the confines of the uvea.

In the course of twenty years Professor Fuchs had removed nearly two hundred eyes for sympathetic disease and, without knowledge of the clinical histories of the cases, he found these changes in all except one of the cases in which the record subsequently showed sympathetic inflammation to have been present. One can hardly demand more agreement than this between clinical and pathologic findings. I doubt if any surgical records of cancer or medical records of tuberculosis were ever so corroborated by post-mortem findings. In the course of the past five years only one important addition to these findings has been made. Jane McIlroy finds the infiltration in both the primary and sympathizing eye to be made up of plasma cells. Professor Fuchs' eyes were nearly all hardened in Mueller's fluid after which, in comparison to formalin fixation, special plasma cell staining is difficult or impossible.

Transfer of the disease from the one eye to the other is now quite uniformly held to be by means of the general circulation. The theory of transmission along the optic nerve sheaths to the other eye has been abandoned and the modified ciliary nerve irritation theory, which succeeded it, was quite conclusively disproved by Roemer in 1903. This theory postulated that the inflammation about the ciliary nerves of the exciting eye produced an irritation of the ciliary nerves in the other eye and a changed nutritional condition favorable to the development of the disease in it after it had been transferred in some unstipulated way. Roemer was unable to get any evidence of such a change in the second eyes of lower animals even after the most varied insult to the primary eye. He not only made use of grosser chemical tests to determine the change in the contents of the fluid secreted in the second eye under these conditions but he also employed delicate immunity procedures for determining any change in the contents of the fluids coming to the eye through the enormous blood supply controlled by the ciliary nerves. All his results were negative and seem to prove that ciliary nerve irritation of one eye does not cause inflammation of the other eye. There is no good reason to doubt that the same holds true for the human eye despite the

fact that sympathetic inflammation has never been produced in lower animals.

Within the past year an entirely new theory of sympathetic inflammation has been presented by Meller, of Vienna. It is based upon the above mentioned works of Fuchs and Roemer, and in my opinion better explains the ensemble of clinical and anatomical phenomena than does any other theory, despite its revolutionary character. The prevailing theory has been that the infection entered the eye directly through a wound or other atrium from without. For this Meller would substitute an endogenous theory of the course of events, as follows: First there occurs some form of damage or insult to the uveal tract, such as a penetrating wound, a toxic iridocyclitis from a necrotic intraocular sarcoma, etc., which lowers the resistance of the part; second, some other part of the body than the eye is the portal of entry for the specific organism. This organism has an elective affinity for uveal tissue and attacks that of the diseased eye because of its lowered resistance. Here it finds a favorable medium for development and at length attains sufficient virility to attack the healthy uvea of the other eye. This endogenous theory better explains the cases in which no wound or opening of any kind can be found to have occurred. These cases are mainly intraocular sarcomas of the primary eye, reports of which are now so numerous and well authenticated as to leave little doubt as to their credibility. Again, the long period between the outbreak of disease in the first and in the second eye is easily explained; here the general infection does not occur for years after the eye is injured. On the other hand the exogenous theory must suppose a period latency of an organism in the eye for the length of which we have no parallel, or else hold that inflammation of a low grade exists throughout the period. Against this latter supposition is the fact that of all the wounded eyes without history of sympathetic inflammation that have been studied, only one has been found to have any areas of "sympathetic infiltration." Furthermore, this theory better explains the fact that nodes of the infiltration are found in the chorioidea of the first eye widely removed from the wound in the front part of the eye and entirely surrounded by an expanse of healthy tissue. If the infection entered by the wound and remains confined to the uvea it is hard to understand why such healthy areas intervene between the wound and typical diseased areas in the back of the eye. On the other hand, if the infection attain the eye as a metastasis, as in miliary tuberculosis, it is easy to explain these multiple, discrete, isolated nodes in the chorioidea. Clinically, too, a chorioiditis disseminata of the second eye has been recognized since the time of v. Graefe and two cases are now on record in which the primary eye showed this same ophthalmoscopic picture (Hirschberg, Heerfordt). This, to my mind, is the best evidence we have of the metastatic endogenous nature of this disease. Finally, in this connection we have the observation of Heerfordt—that cases of uveitis occur in old women which in their chronic course and clinical appearance differ in no wise from sympathetic inflammation, and in which no other cause can be found.

Difficulties in diagnosis are great. Active inflammation is always present in the exciting eye when the second eye becomes inflamed but it may be confined to the back part of the uvea and entirely hidden by an opaque cornea or lens. The period of greatest danger is between the fifth and twelfth weeks, yet cases occur as early as ten days and as late as thirty years after injury. The trouble, too, may break out after the primary eye has been enucleated, though it is said not after a period of five weeks has elapsed.

As stated above, there is nothing in the appearance of the second eye in sympathetic inflammation absolutely diagnostic of the condition but certain findings occur with great frequency. Among these are fine clumps of cells and pigment which form precipitates on the posterior surface of the cornea. These come from the uvea, especially its anterior segment. The changes in the iris are often very characteristic. The tunic thickens, deep posterior synechia binds the entire expanse of the iris to the lens, and an ominous retraction of the root of the iris follows. Deep grooves in the tumefied tissue radiate out from the pupil and new blood vessels form on the surface. Such blood vessels are always pathologic and when they run concentric to the pupil border they are readily distinguished from the normal radial vessels deeper in the iris. A similar picture is sometimes seen in tuberculosis of the iris.

Lastly, much attention is now being given to a peculiar fleck-form disease of the anterior and middle portions of the fundus. These flecks or nodes are quite numerous, vary in size up to one-fifth the diameter of the disc, lie behind the retinal vessels, are not definitely elevated, are yellowish white in color, round, and sharply delimited from the adjacent chorioidea and over-lying retina, often grouped but seldom confluent, and without pigmentation. They probably lie entirely within the chorioidea. The disc and macular region are free and vision is little affected if clouding of the vitreous does not develop. Exactly this picture is not presented by any other condition. The nodes in miliary tuberculosis of the chorioidea usually cause some prominence of the retina and there is more reaction in the neighboring chorioidea. Later a circumscribed atrophy of the chorioidea results and the clear white sclera is exposed. Some pigmentation then occurs but is not as extensive as that ordinarily observed in disseminated chorioiditis.

Prognosis is not invariably bad, despite a widespread opinion to this effect. Useful vision is retained very frequently, especially after sympathetic chorioiditis. Children and young adults seem especially prone to this form of the disease. I have been able to collect records of 29 such cases¹ and can add one of my own (Virgil Lewis). In the 25 of these in which data are given the final vision averages over one-half the normal (0.54). Anything better than one-tenth is medico-legally considered useful vision. There are only two sets of statistics as to the final vision in all forms of the disease after the lapse of considerable time but these

1. V. Graefe, Barbar, Jacobi, Steinheim, F. Krause, Leplat, Schmidt-Rimpler, Schirmer, Hirschberg, Caspar, Haab, V. Hippel, Jr., Leber, Dalen, Coppez, Kitamura, Scheick, Widmark, Fuchs, Heerfordt.

show a decidedly better outcome than is commonly held to occur. Schirmer found useful vision in 14 per cent. of 35 cases after a lapse of five years, and Hermann records a favorable outcome in 63 per cent. of 30 cases one year after the disease. I find records of final vision of 13 of the 21 cases which I got together in an article published elsewhere.² These were cases showing an infiltrative and proliferative uveitis described by various authors before the appearance of Fuchs' article in 1905, and therefore, have a greater claim to be credited as certain cases of sympathetic inflammation than others in the literature up to that time. To these I added three of my own reported at that time, making 16 in all which have been anatomically corroborated. The average vision in this group is over one-third. Four of the 16 had the milder, disseminated chorioiditis sympathetica.

No marked advance in the treatment of sympathetic ophthalmia has been made in recent years except in the use of huge doses of sodium salicylate. One grain per pound of body weight per day is the dosage. I know of no reports covering a large and varied enough group of cases to give a definite comparison between this treatment and the usual mercurial inunction treatment. Atropin should be used as long as it keeps the pupil open and will be tolerated; but because of the long time it must be used it should be restricted as much as possible. Early enucleation I think should theoretically have a good effect upon the further development of even outspoken sympathetic inflammation because it removes a depot from which further infection and reinfection may occur.

DIABETES MELLITUS *

C. F. NEWCOMB, M.D.
CHAMPAIGN, ILL.

Although we are told this disease was known to the ancient Greek and Roman writers we as yet do not fully understand its pathology or etiology. Rather than draw out the fine-spun theories now adduced to account for this disease I omit them altogether. As practitioners we are more especially interested in results so I shall devote most of my attention to the treatment. There are, however, some few things that influence our treatment and whose presence or absence act as indicators to the progress of the patient to which I wish to call your attention in passing.

The first of these is acetone. Acetone is dimethylketone, $\text{CH}_3\text{CO}\cdot\text{CH}_3$, and is a good indicator of the condition, as when acetone is found in large quantity in the urine, the patient does not feel so well and is near coma. Sodium nitroprussid or Legal's test most easily used for acetone consists of taking about 2 c.c. of urine in a test-tube; add a few drops of a freshly prepared solution of nitroprussid of soda. Shake and add glacial acetic acid, then about 2 c.c. of ammonia. If acetone is present a reddish violet color appears.

2. Arch. of Ophth., 1907, No. 2, p. 36.

* Read before the Æsculapian Society of the Wabash Valley.

Diacetic acid is nearly related to acetone, being $\text{CH}_3\text{CO.CH}_2\text{COOH}$, and also indicates the liability to coma. Gerhard's reaction is the simplest indicator of the presence of diacetic acid. Take 10 to 15 c.c. of urine, add ferric chlorid solution until it fails to give a precipitate, then filter and add a few drops of ferric chlorid. A wine red color appears if acetoacetic acid is present.

The third member of the acetone group in whose presence we are interested is β -oxybutyric acid, $\text{CH}_3\text{CHOH.CH}_2\text{COOH}$. No simple or practical test is yet available to us. The presence of β -oxybutyric acid is determined by the polariscope. It being levorotatory decreases the per cent. of sugar found by the polariscope.

Of prime importance to us in the study of our diabetics are the various qualitative and quantitative sugar determinations. Fehling's test is so well known that it does not need reiteration and is perhaps the one best suited to our needs. However, if the amount of sugar is small the so-called Nylander's test is best. Nylander's solution consists of 4 gm. of Rochelle salt in 100 parts of 10 per cent. caustic soda solution to which 2 gm. of bismuth subnitrate are added. If the amount of sugar is small use 10 c.c. of urine to 1 c.c. of the reagent which gives a cloudy, then a dark brown or black precipitate if sugar is present. This test is sensitive to 0.5 per thousand.

Nearly all of the quantitative tests for sugar in the urine depend on the ability of dextrose to reduce metallic oxids, such as copper oxid, bismuth oxid and mercuric oxid. The urine must be first freed of albumin.

The Citron test and the Pavy test, both of which are titration methods, are useful in the quantitative determination of sugar in the urine. As these methods are long I must refer you to works on chemistry for their technic. The polariscope is perhaps the quickest and most delicate method for quantitative determination but unfortunately β -oxybutyric acid plays an undesirable rôle. It is well also to make a determination of the quantity of the nitrogen excreted by the patient.

Our first care then is to make careful study of our patient's diet and his excretions. An exact record of what he eats with a careful quantitative analysis of the urine for sugar and nitrogen will give us data with which to work.

We have now prepared ourselves to undertake the rational treatment of our case. It seems to me the artificial division of cases into mild, medium and severe is unnecessary. It is not always possible to say to which category our case belongs. The underlying pathology may be such that although the per cent. of sugar excretion is small the case may be grave. On the other hand I have observed a glycosuria in a candy manufacturer from too free ingestion of sweets which was speedily corrected by prohibiting his eating between meals.

The treatment of these cases is best carried out in an institution where their diet is carefully supervised but this is not always possible. If the patient is intelligent and the family will cooperate it can be well carried out at home.

There are always disadvantages, however, whose presence will soon make themselves felt. If the patient is a man his occupation will probably make it impossible to collect the entire urine and so invalidate the results of all our percentage calculations. In other cases obstacles are more easily met. In the case of the less educated their appetites are allowed to get away with them and they not infrequently indulge themselves and later strenuously deny it. All these things are obviated where the patient is under control.

As diabetes is a disease of metabolism the most important feature of its treatment is the regulation of the diet. Nearly all of these patients can assimilate and use some carbohydrate food. Our problem then is to find out as nearly as possible the amount which they will tolerate and increase this toleration. We must not lose sight of the general nutrition of the patient, and if possible should increase his weight. The waste from the body as represented by the sugar found in the urine is very important to the proper nutrition, and if it is not made good in some way through the food, the tissues of the organism are consumed.

Before beginning a long course of treatment it behooves us to first establish the patient's "border of tolerance" to carbohydrate. The following diet prescribed by Prof. Dr. C. von Noorden of Vienna will be found efficacious. This may be divided according to the patient's custom into three or four meals.

Breakfast: 200 c.c. coffee or tea with 1 to 2 teaspoonfuls of sweet cream; 80 to 100 gm. cold meat (ham, etc.); two eggs and butter, to which is added 25 gm. white bread.

Dinner: Clear soup with egg; roast meat, fish, game, about 150 to 200 gm.; vegetables such as spinach, asparagus, etc., prepared with butter but without flour, 20 gm.; cream cheese and two glasses of red wine; 25 gm. white bread.

Supper: Beefsteak or cold roast, 150 to 200 gm.; green salad with vinegar and oil; two eggs prepared without flour, two glasses of red wine; 25 gm. white bread; one to two bottles carbonated mineral water per day.

The amount of carbohydrate, i. e., bread, can now be decreased or increased according to the urinary findings. If we find our patient can take 75 gm. of carbohydrate food then we can after two or three days increase the amount 50 gm. per day until sugar appears again in the urine, which would indicate our limit of tolerance. If the amount of sugar found in the urine after two or three days is still less than 50 gm. in a twenty-four-hour specimen, we can go at once to the carbohydrate-free diet. If on the other hand the amount of sugar is larger than 50 gm. we must gradually and cautiously reduce the carbohydrates 10 gm. at a time or 30 gm. a day.

Paradoxical as it may seem diabetics appear to take enormous quantities of a single carbohydrate with beneficial results. There have arisen from this a number of "cures." I have had no experience with the potato cure or the rice cure, etc., but I have seen brilliant results from the oat-meal cure as carried out by Von Noorden. The best results are obtained in young subjects which we all know present the most difficult cases and

which used to succumb regularly to our old routine carbohydrate-free diet. The oatmeal cure may not always give results but every case of juvenile diabetes should be tried on it. In many cases results are astonishing as the sugar and acetone bodies almost immediately disappear. I am not yet ready, however, to accept the theory that the oat contains an active principle that is a specific for diabetes. It may be well at this time to mention a few things to observe: (1) We do not dare to allow any other form of carbohydrate during the time we are giving the oatmeal cure. (2) Patient must not be allowed to take any proteid food. (3) The oatmeal-butter diet may cause a diarrhea, in which case tincture of opium is of benefit. (4) The oatmeal cure is not always available in old people on account of the production of edema. Caffein or theosin are of benefit in this condition.

Another method of treatment is to feed the patient for a time varying from one to several days on fresh green vegetables with butter, allowing in addition to this three to five eggs and considerable quantities of alcohol (red wine and cognac). By this method reducing to the minimum all the things that can be converted into sugar by the organism we expect to reduce the sugar and acetone. If we are not successful we still have one more method to try: this is the hunger day. On the hunger day there is allowed only black coffee, beef-tea, mineral water with lemon juice, red wine and cognac. We should find now that our patient is excreting little or no sugar or acetone bodies. In order that the routine of this treatment may be a little clearer I will give in detail the diet lists as usually prepared for von Noorden's ward patients.

When patient enters hospital he is first allowed to eat his ordinary meals for one, two or three days. Then meal number one for three days. Then for two or three days diet No. 1 minus the bread.

1. *Albumen Rich Diet for Diabetes*.—200 gm. roast, three eggs, 50 gm. cheese (Imperial), 100 gm. ham, 150 gm. butter, 3 x 25 gm. bread. Vegetables, i. e. cabbage, cauliflower, spinach, kraut salad, green salad, chopped green beans (all vegetables without flour), beef-tea, tea or black coffee. Wine about 450 to 600 c.c., 100 c.c. cognac for three days.

1. *Albumin Poor Diet for Diabetes*.—200 gm. roast, three eggs. 50 200 gm. butter and also some vegetable with the roast. Beef-tea, tea or black coffee. Wine, 450 to 600 c.c., 150 c.c. cognac.

Then three days diet of the following:

2. *Vegetable Day*.—Vegetable days on which the patient has only pure vegetables and beef-tea, black coffee, vegetables in the beginning as much as the patient can take, commonly 2,000 to 3,000 gm. with 150 to 200 gm. butter in a day added.

3. *Oatmeal Day*.—Oatmeal day depends on the acetone but generally begins on the seventh or eighth days. Per day 250 gm. oatmeal with 250 gm. butter, black coffee (as oatmeal one can use American Rolled Oats, oatmeal flour and oat grits). The patient shall have five times a day 50 gm. oatmeal and 50 gm. butter. Wine 600 c.c. and 300 c.c. cognac.

4. *Hunger Days*.—Only wine 600 c.c., 300 c.c. cognac, black coffee, beef-tea and the patient must not take anything else.

As to the drug treatment of diabetes little can be said by me that all of you do not know. There is no doubt that opiates exert a beneficial influence but how we are not prepared to say. The only drugs that are of much value to us in diabetes are sodium bicarbonate and calcium carbonate. Sodium bicarbonate is given in 10 to 30 grain doses three times a day and can be given a very long time.

These alkalies are useful in combating the constant tendency of the patients to acidosis.

We soon learn in handling diabetes that each case presents its own individual problems and if we try to follow only one routine we shall fail. Any mode of treatment is only to be used as a guide, not as an absolute cure for all. Good results may be obtained by several methods, but we must carefully study our patient, recognize his peculiarities, rightly interpret the danger signals. If we have our patient under good control and the cooperation of the family we can usually help our patient to become comfortable but he may expect to live on a prescribed diet the rest of his days.

There is unfortunately a class of cases that seem beyond our help with present methods. Perhaps as we understand the etiology and pathology of diabetes better, we may devise a treatment beneficial to these sufferers.

DISCUSSION

Dr. Charles L. Davis, Robinson, Ill.: As indicated by the essayist, it is by laboratory methods that we must establish the foundation for our treatment of diabetes. I have read of some experimentation with pancreatic extract in the treatment of this condition, but think its use is not yet established as a curative agent. I wish to commend the oatmeal diet as being always worthy of trial.

Dr. B. V. Caffee, Terre Haute, Ind.: The use of the extract of pancreas has been known for a long while, as a therapeutic agent in diabetes, but more recent investigations have indicated that it is the bodies of Langerhans, and not the pancreas as a whole, from which is derived the beneficial effects. The pancreatic treatment in any form is yet problematical and not well established.

Dr. C. W. Rutherford, Newman, Ill.: I have been especially interested in this paper because of the hope it holds out for a little patient I have under my care at the present time. The older teaching was to the effect that the prognosis was almost always bad in young children, and it is to those of us who have to deal with this class of diabetics that the Von Noorden treatment especially appeals. I have been treating this child aged 9 years empirically, with some evidence of improvement, manifested by a reduction in the amount of sugar eliminated, and by a lessening in the frequency of urination and the total amount of urine passed in twenty-four-hour periods. During the time she has been under my observation, however, there have been periodic returns of the sugar, for which I have been unable to account. I shall certainly give the oatmeal diet a trial in this case.

Dr. Newcomb (in closing): Pancreatic therapy is as yet problematical; it seems to offer some hope to these cases, but its use has been so far too limited to establish it definitely as a remedy of value.

PREVENTION OF BLINDNESS *

C. B. VOIGT, M.D.

MATTOON, ILL.

According to available statistics, one person in every 1,200 is blind. With what feelings of distress do we contemplate this state of affairs, when we realize that many cases are preventable.

Cohn in studying the prevention of blindness arranges his statistics in three series: 1. Incurable causes: atrophy, inflammation of the retina and optic nerve, tumors, typhoid and congenital blindness. 2. Those which might possibly have been prevented: cases of inflammation of iris and cornea, in which a cure is possible under proper treatment. Central inflammation of the retina in myopia, detachment of the retina, unsuccessful operations and half of all injuries. 3. Cases which could have been prevented by proper prophylaxis, or in their beginning could have been cured by proper treatment. The other half of injuries, all cases of syphilis, trachoma, variolus inflammation, acute glaucoma and gonococcus infection. From this study he reached the conclusion that over one-third of all cases of blindness could and should be prevented.

Climate has to do with the causation of blindness in that in hot countries loose habits of life, squalor and poor hygiene tend to spread contagious eye diseases; and dust and strong winds have the same tendency.

According to Magnus the first five years of life present the gravest danger to sight. More men than women are blind. Heredity plays an important part in the production of ocular defects of which mention may be made of various malformations, but particularly syphilis, to a less degree tuberculosis and myopia. The most frequent syphilitic affections are interstitial keratitis, iritis and retino-chorioiditis and if unrecognized or badly treated or treatment too long deferred may lead to blindness. There can be no prophylaxis properly so called, in cases of inherited diseases, but we must use our influence in preventing the contracting of the marital relation by those unfortunates as their disease may be transmitted to their offspring.

In interstitial keratitis, syphilitic iritis and retinochorioiditis, we must combat the constitutional disease, syphilis, with the recognized treatment and with such local treatment as the case demands. Tubercular parents produce scrofulous children. Here we find phlyctenular conjunctivitis, blepharitis, all forms of keratitis and the corneal opacities they produce, are all causes of blindness. As a means of preventing blindness, these scrofulous children must have treatment and careful attention to hygiene and nutrition.

Ophthalmia neonatorum is, with the exception of atrophy of the optic nerve, the most frequent cause of blindness and while it is one of the chief causes it presents one of the most gratifying problems in preventive medicine, since with appropriate treatment infection may be prevented in

* Read before the Æsculapian Society of the Wabash Valley.

the majority of cases and with our present knowledge of the proper method of treatment when the infection does occur, we can with reasonable certainty cure the disease before blindness ensues. It has been estimated that 90 per cent. of the blindness caused by this disease might have been prevented by cleanliness and the application of solution of silver nitrate in proper dilution. The prophylaxis should have regard to the natural passages as well as the infants' eyes, and should cover the period immediately preceding, during delivery and after birth. As the disease is highly contagious, it is necessary to isolate those attacked and to instruct the attendants concerning the precautions they should take to prevent others from becoming infected. All dressings and contaminated articles should be burned. Instruments, towels, etc., should be sterilized by boiling.

Acute gonococcus infection in adults' eyes is due either to an infection from another eye or from a specific urethritis and the infection is usually introduced into the eye by means of the finger. It is a more dangerous affection than ophthalmia neonatorum and it is not always possible to prevent blindness. Hence the greater need of prophylaxis. The gonorrheic patient should have careful instructions to prevent ocular infection.

Trachoma causes blindness, more often partial, due to involvement of the cornea, ulcers developing with resultant scars and opaque corneæ. These conditions are preventable; first, by preventing infection; second, by early and proper treatment after infection. The disease is very infectious; at times it has been epidemic in schools and armies. Certain localities seem thoroughly infected. It is usually communicated by the common use of various articles such as sponges, dressings, towels and toilet articles and by washing in water or using a basin which had been previously used by a person suffering from this eye affection. It is preventable with proper sanitary conditions. The roller towel in public places is responsible for the transmission of this and other eye diseases. This reprehensible practice should be discontinued and individual towels substituted.

In the comatose period of acute infectious diseases when the patient lies with half-closed lids, the eyes should be protected by suitable bandages as the drying of the exposed cornea often leads to impaired vision or even blindness. Before the introduction of vaccination, small-pox was a very common and widespread disease and it was responsible for much blindness by reason of corneal involvement, but the general practice of vaccination has most markedly diminished the liability of blindness as a sequel of variola.

The early use of antitoxin has saved many an infected eye and its general use has reduced the number of cases of diphtheritic conjunctivitis which in the past usually resulted in blindness.

Tobacco and alcohol are agents which impair the vision and must receive their share of attention in preventing amblyopia. I have recently seen two cases of partial optic atrophy from this cause with vision reduced to 20/100 in which the prognosis is bad. These same men had they been

warned and heeded the warning a few years ago might have had excellent vision to-day.

A serious injury of the eye which surely would produce blindness if neglected or poorly managed may be so treated in the beginning as to cause only slight impairment of vision and a slight injury if neglected may produce serious consequences as to useful vision on recovery. Simple wounds of the cornea and conjunctiva may be inflicted with sharp or dull instruments or from flying particles of foreign matter. Contused wounds of the cornea from blunt instruments are usually more than simple corneal wounds because the force of the blow may inflict injury to the ocular content. Every wound of the eye demands rigid aseptic precautions. They may all, even the most superficial, be regarded as infected and should as far as possible be disinfected. The eyelids, adjacent skin and eyelashes should be carefully cleansed. If the corneal wound contains a foreign body, it should be removed, and care taken to also remove any burned or necrotic tissue from this area, otherwise Nature must throw off these substances by sloughing. In operating on the part, care must be taken not to inflict any unnecessary traumatism. Wounds extending through Bowman's membrane into the corneal substance leave permanent scars and while the scar may seem insignificant, if it is centrally located, it produces partial blindness. They may reduce the vision one-half to one-eighth of the normal degree. Small foreign bodies in the cornea are best removed after the instillation of a 2 per cent. solution of cocaine. Then the particle may be removed with a spud. It is needless to say the instrument must be sterilized and the surgeon's hands clean. The edges of an incised wound must be coapted and in case of prolapsed iris the protruding part must be excised as a prolapse of the iris is rarely satisfactorily replaced and the danger is great of increasing the liability to intraocular infection and consequent loss of vision. Metallic fragments, iron, steel, etc., may best be removed with the aid of the Haab magnet, and if in the interior of the eye, must first be located by inspection or with the *x*-ray and sideroscope when they may often be removed with useful vision resulting. In all wounds the eye should be irrigated with boric acid solution followed by 1 to 8,000 bichlorid solution.

When we have taken all these precautions and still we have a corneal ulcer develop, we must use a cauterizing agent to limit the infection. Silver nitrate solution is excellent and in some instances the use of argyrol solutions is indicated. Lately the use of serum is advocated especially by Darier who reports brilliant results from its use. We may use that serum which is most widely known and easily obtainable, diphtheritic antitoxin. It has a specific effect on conjunctivitis due to diphtheria and a beneficial effect on other infections.

The use of subconjunctival injections of mercury cyanid are often indicated and in tubercular involvement of the cornea or iris, the subconjunctival injection of 2 per cent. solution guaiacol is specific.

Oil above everything else and at once is indicated in burns of the eye and should be continued indefinitely. Castor oil is best. Atropin is indicated in all injuries where the iris is involved or likely to become

involved. Cocain is a local anesthetic and I condemn its use as a remedy. It is more harmful than beneficial. Its anesthetic action lasts but a short time and its continued use causes destruction of the corneal epithelium and consequently favors further infection. Moist or dry heat, dionin and atropin, any one or all three, where atropin is not contraindicated, will control pain. Hot boric solution applied continuously with gauze or pledgets of absorbent cotton will in most instances give relief and at the same time have a cleansing and healing effect by reason of local congestion and leukocytosis which it favors.

Attention to apparently small details and a conscientious regard for asepsis in all wounds of the eye when first treated tends to the conservation of sight and is an all-important part of the surgeon's contribution to the prevention of blindness.

DISCUSSION

Dr. H. B. Vanatta, Lerna, Ill.: Ophthalmia neonatorum is of especial interest to me. We are liable to be somewhat careless in treating this condition and allow the vision to be almost destroyed before realizing that we must give such cases absolutely good care or else refer them to someone who will.

Dr. A. T. Summers, Mattoon, Ill.: I regard this paper as being practical, and one which all of us can follow, it not being ultra-scientific as are many of the papers written on this subject.

Dr. G. E. Lyon, Moweaqua, Ill.: Dr. Voigt's paper is of great value to the man in general practice, because it is he who first sees these eye affections and should be familiar with the various prophylactic measures for the avoidance of blindness. One point in the paper worth emphasizing is that regarding the protection of the eyes of those patients who lie unconscious for any length of time.

ILLINOIS MEDICAL JOURNAL

THE OFFICIAL ORGAN OF THE ILLINOIS STATE MEDICAL SOCIETY

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DECEMBER, 1910

THE CHICAGO CLINICAL MEETING

Chicago, which we have frequently designated in THE JOURNAL as the greatest medical center of the English speaking world, has again come to the front by successfully managing a two weeks' series of clinics. Every man in Chicago who had anything to show placed it on exhibition and practitioners from Maine to California came by scores and hundreds to witness and profit by what they might see and hear. Many lessons might be drawn from this new development of professional assemblages. It certainly demonstrated that a large number of practitioners are earnest seekers after knowledge. While this meeting was devoted almost entirely to surgery, yet it seems that one devoted to medical practice and therapeutics might be made equally interesting and attract as many visitors. We therefore suggest that Chicago internists and specialists organize and arrange for similar purposes.

A second thought is that our state and local society meeting would be infinitely more interesting and beneficial if at least half of the time were devoted to practical demonstration of how, when and why on actual cases. We remember of journeying to one of the smaller cities of Illinois, some years since, to attend a meeting of the county society which we had been invited to address. Perceiving that a large part of the day would

be devoted to idle talk, we visited the small hospital situated in the outskirts of the town and were well repaid by having the opportunity of seeing several rare and interesting cases called to our attention by the sisters in charge. There we learned that there comes to this small hospital each year enough interesting material to entertain and instruct not only the practitioner of this but many adjoining counties, and yet for lack of professional enthusiasm and interest it practically all goes to waste.

Much more is suggested by the unexpected success of the recent clinical meeting, but we leave our readers to pursue it to its legitimate conclusion, namely, that seeing and understanding is infinitely better than hearing and wrangling.

A PSYCHOPATHIC INSTITUTE FOR CHICAGO

We have been aware for some weeks that the State Board of Public Charities and the new Board of Administration have been contemplating the erection of a branch hospital for nervous and mental diseases in Chicago. This hospital is to be located conveniently to the great schools of medicine, and one of its great purposes is to instruct the student body in the diagnosis and treatment of these important maladies. In the presidential address delivered at the annual meeting of the State Society at Peoria, May, 1901, we made the following reference to this subject which may be worthy of repetition at this time.

"Speaking of insane hospitals serves to remind me of the desirability of maintaining in Chicago in near proximity to the medical schools a detention hospital for the insane where clinical training may be given the future practitioners in this state. A moment's consideration will reveal the unfortunate isolation of the 8,000 patients in our State Hospitals for the insane. If a small hospital were maintained in Chicago the instructive cases might be removed there and valuable information given to the 3,500 medical students assembled in this, one of the greatest medical centers in the world. The effect of such instruction would be shown in the future and a reduction instead of increase in insanity would undoubtedly result."

Better education of the medical body of the world in the diagnosis of mental diseases and the successful use of No. "606" promises to do much for the mentality of the race and the relief of the pocket books of the tax payers.

THE MEDICAL PROFESSION SHOWN TO BE POSSESSED OF POLITICAL INFLUENCE

As anticipated in our previous issues the recent elections have shown that the members of the medical profession of Illinois have a well marked influence at the polls. In the primaries several gentlemen who had made themselves obnoxious failed to gain a place on the ticket and at the general election several who had been placed were elected to stay at home as

the result of the activity of the organized profession. In no part of the state was this better shown than in the capital district composed of Sangamon and Morgan Counties and numbered 45. One of the candidates for Senator had made himself especially obnoxious by pressing a number of mal-practice suits against members of the profession, and as a result he was beaten by a large majority. One of the candidates for the lower house was Dr. James M. Bell of Rochester, for whom the profession of the entire district "plumped" and urged their friends to vote. There is no question that he owes his election to this effort. His election is made all the more remarkable when it is known that all three of the members elect are from Sangamon County.

A SERIOUS DISLOCATION

On Page 577 of our November issue under the heading "Why Not Tell the Truth?" appears a statement referring to the American Medical College of St. Louis and the Bennett Medical College of Chicago. From its position it would appear as if this were an editorial expression of this journal, and several of our friends have written expressing amazement at the language used. This editorial appeared in the *Eclectic Medical Journal* of Cincinnati and should have appeared after the letter in the correspondence columns signed by Edward J. Farnum, of 42 Madison street, Chicago. It is "the second article" referred to in the statement preceding Dr. Farnum's letter.

DIFFERENCE BETWEEN LEGAL AND MEDICAL MAL-PRACTICE

A firm of good attorneys in Springfield is said to have given such poor advice to a client as to cause said client to lose three thousand dollars. There seems to be no recourse for such malpractice. Lawyers refuse to prosecute such cases. Let a medical man have misfortune in his practice and the legal profession shows no lack of attorneys willing to do the bidding of a venial client, with everything to gain and nothing to lose, and together they move heaven and earth to extract coin from the pockets of the members of a profession certainly as conscientious in their work, and as well qualified to practice as are the attorneys.

NOW YOU SEE IT AND NOW YOU DON'T

To our request for news items of interest to the people and medical profession of Illinois, to be published in the ILLINOIS MEDICAL JOURNAL, the *de facto* Secretary of the State Board of Health turns a deaf ear. We are therefore compelled to furnish our readers with such important decisions of the Board as can be gleaned from the columns of the daily press and our esteemed contemporaries. One of these important decisions we find in the following taken from the news columns of the *Journal* of the

A. M. A., to wit, the Illinois State Board of Health at its last meeting *again* declared the St. Louis College of Physicians and Surgeons not in good standing. We refrain from commenting on this heroic action of the Board.

THE STUDENT VOLUNTEER MOVEMENT FOR FOREIGN MISSIONS

We are in receipt of a letter from the secretary of this organization, Mr. W. B. Smith, 125 East Twenty-Seventh street, New York City, from which it appears that more than fifty physicians, both men and women, and twenty-six trained nurses are needed now to fill important places in the Orient and other foreign countries under the different Missionary Societies.

They request men and women of irregular mold. Traveling expenses and comfortable support are provided by the missionary society making the appointments. In various communities the following statements are made to which we call attention of such members of our society as might be interested in the same. It is said physicians are needed immediately for the following stations, only a few examples are given:

In the remote field of BONYEKA, AFRICA, a medical missionary is needed for pioneer work, three years in the field and one at home on furlough. Must be a member of the Christian Church (Disciples).

Two physicians with strong gifts and training for pioneer work in the far interior of AFRICA.

A physician and surgeon for the hospital in TEHERAN, EAST PERSIA. This important hospital that has done such splendid work for years is *now without any one in charge*.

Two physicians for GERMAN WEST AFRICA, to work in a large territory where there are no doctors at present. *Hospitals will be erected if the man can be found*.

A physician for TAYAPAS, PHILIPPINE ISLANDS. A population of 214,000 in this province. The town of Tayapas has 14,700.

At SHANGHAI, the most capable physician at St. Luke's Hospital has just been ordered home on account of a serious breakdown in health. His return to this country leaves an immense gap. One of the choicest young physicians that can be found is needed for his place.

CENTRAL INDIA: A woman physician and surgeon for a finely equipped hospital at Jhansi.

Two women physicians for stations now without help and in great need in WEST SHANTUNG, CHINA.

In a recent number of the New York *Times* a physician practicing in Greater New York states that the whole trouble with the profession of medicine is that it is overcrowded. "There are more physicians in Greater New York than in all of the rest of the State, and five times more than in all Connecticut." He goes on to give figures and reasons why this city is overcrowded with doctors. "There are entirely too many hospitals in New York. One-half the number would be plenty."

What is true of New York City is true in a large degree of our whole country, especially if compared with the terrible destitution and need in other lands. In this country there is one physician for every 570 people, while on the foreign field there are whole regions without a hospital and millions that suffer and die without scientific medical skill or care.

The opportunities for medical work on the foreign field from a purely professional standpoint are unparalleled. The work of medical missions in the 400 hospitals and 783 dispensaries which are already established on the foreign field from Greenland to India and all the way across, with 6,000,000 out-patients, is its own justification.

Correspondence.

ANOTHER COMPLAINT

CHICAGO, Nov. 1, 1910.

To the Editor:—The high class ideals in medical education for which the general medical man has been striving during the past decade are supposed to be on their way somewhere but evidently have been side-tracked and the conditions for which he had hoped have reverted and in many respects matters are worse now than before he demanded these higher ideals. To a great extent no doubt this is due to the general selfishness of individuals in trying to show their authority; forgetting that the laws were made for the charlatan and pretender and that it is he that must be watched and not the good, upright citizen.

The editorial in the October JOURNAL but reflects the sentiments of the great mass of the profession in Illinois and especially those who may have had personal business with the Illinois Board.

While the general medical man has demanded better educational qualifications and instruction as well as better laws he hardly thought that he was dealing with those who would not respect his own conditions.

That the various State Boards of Health have taken it on themselves to make it just as easy as they possibly can for the new graduates and conversely just as hard for the older practitioners there is no doubt in my mind. That the medical colleges can have laws made to suit their own wishes so as to make it easy for their graduates to pass the board and that once having passed one board they are eligible for reciprocity anywhere can be verified. Look up the records of the Illinois Legislature in the past decade and you may find ample proof for this assertion. There is nothing in these records however that even aims to protect the honest practitioner should it be necessary for him to change his location. This protection of the new fledgling against the older man has made Chicago to be looked on as "the plague spot" in medical education.

That each State demands a heavy penalty of the practitioner to be allowed to work for humanity at poor compensation needs no comment. The records show this plainly. That these conditions are a reflection on the general practitioner's fitness there is no doubt. A man who has been

practicing in the higher medical centers must get out his quiz compend and plug a long time to show that he is not unfit to practice in some isolated community. The quiz compend and the fee seem to be an essential factor in his qualification to practice.

I will mention two specific instances in the Illinois Board to prove my contention that the boards try to make it just as easy as they can for the new fledgling and just as hard as they can for the older practitioner. The newspapers of Chicago just recently were full of sensationalism about how easy it was for the new graduate to gain recognition and how the professors looked out for the students' interests; but my case has not been heralded although the records in the board books will prove my assertions.

Some five or six years ago I had occasion to report a senior medical student for practicing without a license. The case was a flagrant one. The student was running a poker game in the rear of a cigar store during his summer vacation and as a diversion he wished to gain in surgical reputation by circumcising all his friends that allowed him to do so and incidentally that paid him for his services. It so happened that I was called in to look after a severe case of septic infection from one of these operations. After repeated efforts to have the student do what was right with his victim and his refusal I reported the case to the board. It was investigated and the facts were not denied but I was informed at the office of the board that "the board had decided not to prosecute senior medical students." Of course I dropped the case in disgust. The victim however gave it out plainly that he had appealed to his brother, a practitioner in Indiana and a graduate from the same school. This brother promptly came to Chicago and fixed it up with the representative of the State Board of Health who by the way was also a professor on the staff of the medical college where they both were students. The secretary of the board has just recently divulged the secret which I did not know before that he had instituted suit in this case but for some reason which no one has yet been able to discover the suit was dropped.

Another instance: Two years ago I wrote to the Secretary of the Kansas State Board and after stating my qualifications asked if I could receive a reciprocal license without examination. I was told I could and a blank sent for me to fill out. I left this blank lay in my office and last spring had occasion to use it. I filled it out and had it verified by every one that the Kansas Board demanded and sent it to Springfield for verification by the Secretary of the State Board. It was promptly held up. This fall I wished an explanation and was told that the Kansas State Board had no right to promise me reciprocal license as the Illinois Board did not reciprocate with the Kansas Board on such qualifications.

Perhaps this is so; but as this matter was up to the Kansas Board to correct, professional courtesy at any rate would have led the Illinois Secretary to verify my certificate stating the facts; but instead I was led to infer that it was my duty to take the Illinois examination and pay the board a fee to show them that I was capable to practice. Of course a diploma from two of the best Chicago medical colleges, a license by the

Illinois board before the present law went into effect and twelve years of reputable practice among the brightest practitioners in the world were only milestones to prove that I was not competent, but a few weeks hard reviewing by quiz compends no doubt would have been better authority for my fitness to treat the sick.

Perhaps my experience is exceptional but at any rate it may be and no doubt is along the same lines that prompted the editorial in the October JOURNAL.

The question of protests that is now being agitated against the hardships imposed on the older practitioners is in direct line with the evolution and realizations of higher ideals in medicine which every intelligent practitioner gladly welcomes. It is in line with the great question of the "Dispensary and Hospital Abuse" problem that is now before the profession in the city and which has enmeshed the practitioner in the large cities and reached out hundred of miles into the country.

The present movement in the city is but an attempt to crush out the small dispensary and place it in the hands of the large institutions so that they may send out better young graduates to compete with the older men. That we need better young graduates is conceded. That we need opportunities and better treatment of the older men must be granted.

The questions will only be settled as each and every one makes it his duty to join a strong organization and to be a strong unit to help along in the higher ideals as well as to demand protection for those who are worthy.

The public have, and will continue to bless the highly educated medical man and it is only when he by continued study and work will meet those higher ideals that he will be recognized. But the medical college which has graduated him is not looking after his interests and the moment he receives his diploma their interest in him ceases and it is then that the real struggle for existence begins. The medical college is too busy looking after the interests of those they are about to send out to do anything for him. The graduate of former years must look out for himself. Will he do it?

DANIEL S. HAGER, M.D.

740 West Madison street.

A NEW DEVELOPMENT OF PRACTICE IN DIXON

DIXON, ILL., Oct. 28, 1910.

To the Editor:—In the thirty-four years in which I have practiced medicine in this town, I have frequently lost patients by other doctors underbidding, but I never knew of rebating until this last year.

While I was taking a vacation, one of my patients called another physician during a crisis in a chronic disease. Several months after my return, I was again called to treat my patient in another crisis. After this attack was over my patient told me how *good* the other doctor had been to him. The patient said: "When I was better I asked for my account. After I had paid him, the doctor said: 'Our medical society compels us to charge a certain amount for a visit, but they do not prevent me from returning a part of it,' and he handed me back some of the money I had given him."

Our rebating physician is a member of all the medical societies, holds a contract with the United States, a railway company, a large corporation and I do not know with how many fraternal societies. He is also an all-round specialist in surgery, obstetrics, eye, ear, nose and throat diseases, and also general medicine. Having so many sources of revenue he can afford to rebate, as it does not seem to be a matter of justice with him.

Yours respectfully,

HARRIET GARRISON.

DON'T, DON'T, DON'T! FOR YOUR BABY'S SAKE

Don't forget baby needs water to drink.

Don't give baby ice water.

Don't feed irregularly.

Don't give baby a "soother."

Don't feed too often.

Don't feed meat to baby.

Don't feed between meals.

Don't keep baby too warm.

Don't pin diapers too tight.

Don't chew baby's food for it.

Don't teach baby to suck its thumb.

Don't make a plaything of baby.

Don't try to amuse a young baby.

Don't use the remains of last feeding.

Don't play with a young baby.

Don't punish while angry—wait.

Don't kiss baby's mouth and hands.

Don't forget baby's bowels.

Don't worry—worry wears worse than work. It also affects baby.

Don't think baby is hungry every time it cries. Try water to drink.

Don't feed baby indigestibles and wonder why it is sick.

Don't give baby pain when you might give it happiness.

Don't put a baby to sleep in a closed room.

Don't teach baby something you will punish it for later.

Don't forget that the baby knows more than you think it does.

Don't think a baby has worms every time it has fever. Worms come from dirty, unwholesome food.

Don't spoil a good disposition by teasing.

Don't try to develop a baby's will. It has all the will it will ever have. Develop its judgment.

Don't delay baby's training until you think it knows better. Deferred training is never begun.

Don't give the baby beer.

Don't give the baby candy.

Dr. Frank W. Allin, an expert on baby care and treatment, furnishes the above words of advice to mothers for publication in *The Bulletin* on request of this Department.—*From Bulletin, Chicago Department of Health.*

COUNTY AND DISTRICT SOCIETIES.

ADAMS COUNTY.

The regular monthly meeting of the Adams County Medical Society was held in Quincy, Nov. 14, 1910, with President D. M. Knapp in the chair. Others present were Drs. Gilliland, Grimes, Knox, Beirne, Center, Whray, Nickerson, Spence, Knox, Collins, Kidd, Werner, Christie, Mercer, W. E. and Ray, Pearce, Austin, Reticker, Bates, C. R., Bloomer, Wessels, Blickhan, Whitlock, Ruth, Ball, Beeker, Groves, Mitchell, Gabriel, Nichols J. B. and K. Shawgo, Lierle, Haxel, Ross, Knapheide, Baker, and Wells. Also Dr. Henry Schwarz, St. Louis. Drs. Beavers and Kaylor, Barry, Ill., Drs. Stine and Green, Quincy, and a number of the nurses from Blessing Hospital training school. The minutes of the October meeting were read and approved. The committee appointed to meet with the Board of Education to devise a plan for medical inspection of the public schools made report through Chairman Nickerson. Considerable opposition was made to receiving the report and undertaking the work on account of the failure to provide for compensation to the physicians for such work. The report of the committee was finally adopted and they were given power to go ahead with the plan. The applications of Drs. Weisenhorn and Pearce, Quincy, were favorably reported by the Censors and their election to membership followed. The usual bills were read and allowed. Adjournment to Hotel Newcomb was then had.

After luncheon the society was called to order and the president introduced Dr. Henry Schwarz, professor of obstetrics and gynecology in Washington University, and president of the St. Louis Medical Society, who addressed the society on the "Prevention and Treatment of Childbed Fever," illustrating his remarks by stereopticon demonstration and emphasizing the following points: In the year 1909 over 7,000 women died in the United States from puerperal septicemia. In the registration area, which covers 55 per cent. of the population of the United States, 3,427 cases were reported as having died from puerperal septicemia and 2,658 from other causes connected with childbearing. Among these other causes are a good many which ought to be classed with puerperal infection, for instance twenty-three cases of phlegmasia alba dolens. It is therefore safe to assume that with the cases of septic infection occurring among the 44.7 per cent of the population outside of registration districts, in which well trained obstetricians and adequate hospital facilities are not as plentiful as in the better equipped registration area, that in 1909 7,000 women died in the United States from puerperal sepsis is a conservative estimate.

The lives of the greater number of these women ought to be saved, since it is possible to avoid puerperal infections of all kinds with absolute certainty, except in rare cases in which a local tuberculous process spreads after delivery or in which a dormant gonococcal infection becomes more or less acute. In all the severe forms of puerperal infection, unless there is proof positive to the contrary, it must be assumed that the infection has been carried to the patient by doctor or nurse. While it is possible to prevent these cases with great certainty, we are rather helpless when they have occurred and the severer forms of general streptococcal infection are usually fatal in spite of Credé's ointment, the excision of the thrombosed veins, the use of bacterial vaccines and of antistreptococcal serum. Therefore we should be sure of handling all obstetrical cases with perfect surgical cleanliness.

The uterine cavity under normal conditions is germ free, and so is the ovum; during labor the parturient canal is constantly flushed by sterile material from within outward; first by the forewater when the membranes rupture; next by the body of the child as it is driven downward; then by the rest of the amniotic fluid

and finally comes the placenta, like a big aseptic sponge and mops up the entire parturient canal. If after delivery a sterile dressing is kept over the vulva, infection is impossible, provided that everything which has come in contact with the canal during labor was germ free. This means that the hands of the doctor and of the nurse and that the instruments used must be sterilized. With the instruments this is readily done by boiling them, but the hands of doctor and nurse do not permit of perfect sterilization and should therefore not be brought in contact with infectious material. When such contact has occurred or is unavoidable at times when the general practitioner has handled cases of diphtheria, scarlatina or erysipelas, the person contaminated should take a bath, scrubbing hand and hands thoroughly with soap and water, make an entire change of clothing and subject his hands repeatedly to the ordinary modes of disinfection by green soap, alcohol and corrosive sublimate and such a person should not attend any woman in confinement during the next twenty-four hours. Since it is impossible ever to completely sterilize the hands the wearing of sterile rubber gloves over the sterilized hands must be insisted upon for each and every case, and by abstaining from unnecessary vaginal examinations even infected hands may be comparatively safe. But whenever possible a doctor in such a dilemma should turn his obstetrical work over to some brother practitioner until his own presence in a delivery room will no longer mean a real danger to the life of his trusting patient.

At the conclusion of Dr. Schwarz's most excellent and authoritative address a rising vote of thanks was given him and the Adams County Society honored itself by electing him as one of their honorary members. The doctor responded in an appreciative way. Dr. A. E. Kidd was given the thanks of the society for the use and operation of his fine stereopticon. Adjourned.

C. A. WELLS, Secretary.

ÆSCULAPIAN SOCIETY OF THE WABASH VALLEY

Sixty-Fourth Annual Meeting.

The Sixty-Fourth Annual Meeting of The Æsculapian Society of The Wabash Valley was held at Paris, Ill., Thursday, October 27, 1910.

The society was called to order at 11 a. m., with the President, Dr. E. B. Cooley, of Danville, Ill., in the chair. The minutes of the last semi-annual meeting were approved as read. The report of the Treasurer, showing a balance on hand of \$266.48, was adopted. The secretary read a communication from Dr. Geo. N. Kreider, Editor of the ILLINOIS MEDICAL JOURNAL, offering to publish the proceedings of this meeting of the society in the December number of the Journal, and to send a copy of same to each of the Indiana members. On motion it was agreed to accept Dr. Kreider's offer. It was suggested by the secretary that the society elect a nominating committee, in order to do away with the frequent embarrassing election contests before the general meeting. This was objected to by some on the ground that it savored too much of political methods, and the subject was dropped for want of a motion. The Board of Censors reported favorably on the following applicants for membership: F. H. Jett, Terre Haute, Ind.; C. E. Morgan, Humboldt, Ill.; E. D. Kerr, Westervelt, Ill.; Jno. F. Lawson and R. B. Miller, Sullivan, Ill.; E. L. Damron, Henry Taphorn and P. I. Cromwell, Effingham, Ill.; F. P. Auld, Shelbyville, Ill.; R. E. Kleckner, Mattoon, Ill.; D. D. Grier, Gays, Ill.; Geo. T. Johnson, Terre Haute, Ind., and E. L. Baum, Trilla, Ill.

The following applications for membership were presented during the meeting: Roland Hazen, B. G. R. Williams and Geo. B. M. Hill, Paris, Ill.; N. W. Clark, Rossville, Ind.; Byron M. Hutchings and O. O. Alexander, Terre Haute, Ind.; G. H. Henry, A. W. Allen and G. C. Kasdorf, Robinson, Ill.; S. A. Smith, Annapolis, Ill.; P. E. Kimery, Lerna, Ill., and J. M. Guy, W. A. Cochran and A. E. Dale, Danville, Ill.

Officers were elected for the ensuing year as follows: President, F. E. Bell, Mattoon, Ill.; Vice-President, H. B. Vanatta, Lerna, Ill.; Sec'y-Treas., H. N.

Rafferty, Robinson, Ill. (re-elected); Board of Censors, Frank Dunham, Robinson, Ill.; M. A. Boor, Terre Haute, Ind.; W. H. Tenbroeck, Paris, Ill.; S. C. Glidden, Danville, Ill.; A. T. Summers, Mattoon, Ill.

Danville, Ill., was selected as the place for the semi-annual meeting, to be held in May, 1911. The question of a nominating committee was again brought up by Dr. T. C. McCord, Paris, Ill., and he was asked to present his resolution in writing at the next session of the society.

The following papers were read during the afternoon and evening: "Diabetes Mellitus," C. F. Newcomb, Champaign, Ill.; "Fractures of the Skull," I. L. Firebaugh, Robinson, Ill.; "Worse Than the Great White Plague," Chas. B. Johnson, Champaign, Ill.; "Recognition of Extra-Uterine Pregnancy," A. Merrill Miller, Danville, Ill.; "Therapeutic Nihilism," James Miles, Merom, Ind.; "Hernia, With Report of Two Cases," Joseph H. Weinstein, Terre Haute, Ind.; "Surgical Aspects of Hernia," H. N. Rafferty, Robinson, Ill.; "Analytical and Microscopical Study of Pus," by John Baty (1838), Translated by L. J. Willien, Terre Haute, Ind.; "Aneurysm of the Aorta," with report of case and presentation of specimen, Chas. N. Combs, Terre Haute, Ind.; "Prevention of Blindness," C. B. Voigt, Mattoon, Ill.; "The Value of Case History Writing," B. V. Caffee, Terre Haute, Ind.

At six p. m., the society adjourned to the Masonic Hall, where the annual Society Dinner was served to eighty-four members and guests. At seven o'clock the society was again called to order, and Drs. Chas. B. Johnson and J. T. Montgomery were appointed a committee to escort the President-Elect, Dr. Bell, to the Chair. Dr. Bell expressed in a few well chosen words his appreciation of the honor conferred upon him, and then called on the retiring president, Dr. Coolley, for his Address, which was on the subject of "Our Research Workers." Dr. Coolley's plea for this portion of our profession was so logical, so rhetorical and altogether so thoroughly captivating that it was on motion decided to make it a part of the permanent records of this meeting. It was moved and carried that Dr. Chas. B. Johnson be asked to read his paper "Worse than the Great White Plague" before the coming meeting of the Illinois State Medical Society.

The secretary was asked to prepare an obituary of the late Dr. James Newton Matthews, of Mason, Ill., long an honored "Esculapian," for incorporation with the minutes, and also that suitable resolutions be drawn and sent to the widow.

This society is still proud of the fact that it is the oldest medical organization which has been in continuous existence, west of the Allegheny Mountains.

There are received each year an average of twenty-five applications for membership in the society, which now has enrolled about 250 members, at least half of whom were present at this meeting.

COOK COUNTY

CHICAGO GYNECOLOGICAL SOCIETY

At the annual meeting, held October 21, of the Chicago Gynecological Society, officers were elected as follows: G. Kolischer, president; Charles Paddock, first vice-president; R. Holmes, second vice-president; W. Gilmore, secretary; H. Stowe, editor; Charles Reed, treasurer.

CHICAGO MEDICAL SOCIETY

Regular Meeting, Oct. 12, 1910

A regular meeting of the Chicago Medical Society was held in the Northwestern University Building, Chicago, Wednesday evening, Oct. 12, 1910, at 8 p. m. The president of the society, Dr. Alex. H. Ferguson, occupied the chair. Dr. Charles F. Hoover, Cleveland, read a paper entitled "Disturbances in the Peripheral Cardiac Innervation in Acute and Chronic Diseases." Dr. Albion Walter Hewlett, Ann Arbor, Mich., then presented a paper on "Some Clinical Aspects of Cardiac Irregularity."

DISCUSSION ON PAPERS OF DRS. HOOVER AND HEWLETT

Dr. J. A. Robison:—Mr. Chairman: I think we are to be congratulated on having heard these very valuable papers. The authors have shown in a very able manner the progress which has been made during the past few years in the study of the innervation of the heart. I think the paper of Dr. Hoover is especially valuable to clinicians and general practitioners, inasmuch as it suggests to them that there are a great many cases which come under their notice that are due not to any particular pathologic condition of the heart muscle or the valves or tissues, but to some particular disturbance or perversion of the nervous function. We all know that physical and psychical causes will disturb the heart's action. We know that fright will cause cessation of the heart beat, or irregularity of the heart's action. We know that emotional disturbances of all kinds will produce these cardiac irregularities, and, strange to say, excessive joy is more fatal than excessive grief. History is full of examples where individuals have died on the receipt of some very joyful news.

During the past few years, during the epidemics of influenza, it has been my experience, and I think that of all of you, that many patients who previously had not complained of any disturbance of the heart, after attacks of influenza, were victims of heart disease. I have in mind, particularly, one case of a man, aged 46, who had an attack of influenza two years ago. After having recovered from the acute attack he had occasion to inspect some work on one of the large buildings being erected in Chicago, and there being no stairs in the building he had to climb ladders to the fifth story. When he arrived at the top he was suddenly attacked with syncope, and had to lie down for several minutes. As a result of this acute attack of cardiac dilatation, he was confined to his residence for six months, the victim of cardiac irregularity. There was no evidence, so far as I could ascertain, of any organic disease of the heart, but on his attempting to resume his ordinary occupation, which was not a laborious one, he would be overcome with these attacks and suffered extremely. That man to-day has an intermittent and irregular heart, and this condition is increased whenever he suffers from indigestion, the reflex disturbance of the pneumogastric nerve causing arrhythmia.

Now, I want to relate one or two points in order to open the discussion. The next point is in regard to the effect on the heart of excessive manual labor. Several years ago, when the North Chicago rolling mills were in operation on the North Side, it was my opportunity to visit several cases where patients were supposed to be sufferers from organic heart disease. These men could labor only from four to six hours at a time because the work was excessively heavy and heating. In quite a number of those cases I found that there was no evidence, so far as physical examination was concerned, of any organic disease of the heart, but that they suffered principally from peculiar and distressing sensations of irregularity, dropping of the beat, and those symptoms which are so distressing to people who would not otherwise know that they had any cardiac disease. The nervous apparatus of the heart seemed most frequently to be out of tune.

In regard to the second paper, by Dr. Hewlett, I think he has very graphically described the alterations which take place in the heart mechanism in various conditions.

While the polygraph in the hands of a competent operator may be of great value, it is an instrument that will probably not come into general use, for the ordinary methods of diagnosis are generally sufficiently accurate to enable the physician to accurately diagnose the case under observation.

Dr. Robert H. Babcock: Mr. President: I feel I can say nothing that will add to these papers, because in many respects they pass beyond my sphere of experience. I have never seen a case like those so well narrated by Dr. Hoover, but have seen many cases of slowing acceleration or irregularity of the heart's action due to chronic or acute disease elsewhere than in the vagus, that is, vagus neuritis. Therefore, I feel that what I would have to say would be going afield, since his paper is concerned with cases of vagus neuritis. Probably all

of us have witnessed instances of arrhythmia, excitation or retardation of the heart in connection with abdominal diseases; thus we find bradycardia in connection with gall-bladder disease, especially gall-stone colic, and in such cases the disturbance is through stimulation of the vagus without any pathologic alteration of the nerve itself. I have seen prolonged tachycardia dependent on chronic appendicitis, and in such cases also the acceleration is only an exaggeration of physiologic action through stimulation of the sympathetic. I will say nothing more, therefore, on this paper than to congratulate Dr. Hoover on the accuracy and extent of his observations.

With regard to Dr. Hewlett's paper, I am in the position of the general practitioner who has no practical experience with the polygraph. For obvious reasons, I have been unable to use the instrument, and hence it interested me extremely to hear the remarks of one so experienced in its use. There can be no question of its value in the hands of a man who can use it skilfully and can interpret its tracings. I understand it is not so much the manipulation of the polygraph as it is the intelligent interpretation of its tracings that is difficult. The instrument enables one to understand the cause and nature of arrhythmias, and undoubtedly therefore aids one in forming prognosis. But representing as I do the position of a general practitioner, I am interested in the question of its value as an aid to therapeutics. It has seemed to me that physicians who have seen many cases of cardiac irregularity can in most instances determine when arrhythmia depends on an organic alteration of the heart muscle, and hence requires a very careful administration of digitalis and allied drugs. Of course, in cases of arrhythmia due to a nervous cause, there is often great difficulty of diagnosis, just as in the case of the student mentioned by the essayist, and here the polygraph is of special aid. But when in a given case we detect signs of organic disease and then find a persistent arrhythmia, or what is termed *pulsus irregularis continuus*, we can without the polygraph I am sure determine or assume that the arrhythmia is irremediable. The question arises why, when a practitioner is at a loss to determine whether or not the irregularity is of nervous origin, why, I say, he may not administer a dose of atropin? A single physiologic dose of this drug may be followed by disagreeable effects, but it would not do permanent harm, and might enable one to form a diagnosis. This instrument is also of great value in helping us to determine the nature of some cases of paroxysmal tachycardia. It has been shown by recent observations in London that there are two types of paroxysmal tachycardia: one in which there is a simple acceleration of the heart's action, the ventricular systoles following the auricular systoles in rhythmic succession, and another in which the tachycardia is arrhythmic and of nodal origin or due to auricular extrasystoles that are not all transmitted to the ventricles. In such cases the polygraph affords valuable information as to prognosis.

I was pleased also to hear what the essayist said in regard to the administration of digitalis, because we all have seen cases of pronounced arrhythmia in connection with organic heart disease in which the digitalis, although it did not correct the irregularity, certainly did improve the circulation by slowing and strengthening cardiac contractions. Of course, it would be an easy matter in such cases to do harm with digitalis, but if one feels his way cautiously, should not we use the drug the same as we did before we knew anything about the polygraph? When I first began to read of MacKenzie's and Hirschfelder's observations, I got into rather a panic, feeling that since there are arrhythmias which I could not discriminate without a polygraph, I could not dare to prescribe digitalis. I was getting into a state of therapeutic nihilism, but now I am getting out of that state, since I realize that in the great majority of cases the instrument is not indispensable. In conclusion, I wish to congratulate Dr. Hewlett on having given us so valuable and instructive a presentation of this subject.

Dr. Frank Billings:—Mr. Chairman: I am sure you all feel as I do, that we ought to say something, at least, to express our thanks to these gentlemen for coming here and giving us so much information. Like Dr. Babcock, I do not

feel able to discuss the finer points of the diagnosis of the heart as based on the polygraph, although I have recently attempted to work with the instrument. I have felt until recently that most of the irregularities of the heart were organic, and that few of them were of a purely functional character. I do not know that my reading has disturbed that belief very much; that is, that it seems impossible that the irregularities which are described as nervous can be due to a pure disturbance of nervous function without organic change in the nerve, or the other anatomic elements of the heart. Even if the irregularities are due, as they are so often, to intoxication, then that poisoning must produce some change in the nerve or muscle to bring about the irregularities. Intoxication from tobacco is a very common source of irregularity of the heart, producing an extrasystole in many instances. Irregularity may come from the overuse of digitalis. We often see this in the infectious diseases where it has been given with the idea that it would brace up the heart and carry the patient through. We all know that its overuse in valvular diseases of the heart brings about the same thing. I have seen patients, as described by Dr. Hoover, on whom I could make a diagnosis of vagus neuritis. I have had patients with enlargement of the mediastinal glands and with irregularities of the heart, which, on the interpretation placed on it by Dr. Hoover, was neuritis. I do not doubt that irregularity of the heart in diphtheria, in the sudden deaths, must be a vagus neuritis.

I have heard Dr. Hewlett speak before on the irregularities of the heart, but what he said to-night gave me as much pleasure as though I had not heard it before. It was so good it seemed new. There is no question but that the polygraph has enabled us to better systematize the knowledge of the heart action and differentiate between the different abnormal conditions. There is no question but that the polygraph is necessary in some instances to definitely diagnose irregularities of the heart action.

I want to repeat what I said: that we owe the gentlemen our sincere thanks for coming to us and presenting these papers.

Dr. Edward F. Wells:—Mr. President: The influence of the vagus on cardiac rhythm, as presented by Dr. Hoover, is most interesting, and deserves more attention than has heretofore been accorded to it. A series of cases occurring under my observation so aptly supplement those detailed by the essayist that they are worthy of brief mention. The first case is that of a gentleman who, during convalescence from typhoid fever, had an attack of paroxysmal tachycardia of, to him, alarming severity. During the nearly thirty years which have since elapsed he has had numerous attacks, of gradually diminishing severity. The patient has a notable impurity of the mitral sounds. The second case is that of a lady who, following a severe surgical operation in 1894, had a prolonged and severe attack of tachycardia, and many repetitions occurred at frequent intervals during the following few years. About ten years ago it was noted that these attacks were induced by raising the hands, forcibly, above the head, as, e. g., in lifting a heavy book from a high shelf. Subsequently, pains were taken to avoid movements of this kind, and with such success that the attacks are now very infrequent. The third case is that of an elderly gentleman, who for many years had attacks of mild angina on walking rapidly, or in ascending an elevation. Following an attack of pneumonia in 1900, he had a most distressing seizure of angina, with tachycardia. This was followed by very frequent subsequent attacks, at intervals of a few hours to several days or weeks. On one occasion, about six or seven years ago, an emetic was given to rid the stomach of a large amount of undigested food, and it was noted that immediately on the occurrence of vomiting both the angina and tachycardia ceased. Since that time this has been adopted as a routine treatment in his case, and always with success; as soon as profound nausea has been induced the tachycardia ceases instantly. Since this treatment was begun the anginal feature, which was early of a most distressing character, has been only moderately in evidence. It should be noted, in this case, that profound nausea appears necessary to give relief; simply evacuating the stomach, as with the tube, is ineffectual. In yet another

case, a gentleman past middle age, with a valvular cardiac lesion, chronic interstitial nephritis, very high blood-pressure, etc., has frequent attacks of profound angina pectoris. If he can reach a wall, elevate both arms as high as possible, then slowly allow one hand to descend in order that he may irritate the pharynx sufficiently to induce the eructation of gas, he is immediately relieved of his distress, but is profoundly prostrated for a short time. In these cases, and others of a similar nature which I have from time to time observed, some vague disturbance may well be present. However, as differing from those given by Dr. Hoover, my cases have all been persistent.

Dr. R. B. Preble:—Mr. Chairman: I wish to acknowledge to Dr. Hoover and Dr. Hewlett the pleasure which I have had in listening to their papers.

There are certain of the infectious which are with more or less frequency followed by bradycardia; particularly conspicuous in this regard are diphtheria and pneumococcus infections, whether in the lungs or elsewhere. I have always been inclined to the opinion that bradycardia, as one sees it frequently after pneumonia, is the result of a transient myocarditis, getting that opinion from such pathologic reports as are in existence. I shall look into these cases more carefully and see whether or not the atropin has the effect it had in some of the cases that Dr. Hoover reported. If it has that effect I will have to give up the idea that myocarditis is the basis of the bradycardia.

I am glad to hear Dr. Hewlett's conclusions with regard to the polygraph. I have of late given this subject some attention, and the conclusion which I reached was about this: that in the vast majority of the cardiac cases the polygraph gave us no materially important additional information, but that there was a small group of cases in which the polygraph may give us valuable information. I hope that from the polygraph we may get some assistance in that type of cases which to me is particularly distressing, that is, the development of cardiac irregularities in neurasthenic individuals at a period in life in which one must think of a beginning myocarditis. Cases of that sort are not rare, and they are sources of great anxiety, because it is so material whether one decides that the individual is simply suffering from a cardiac neurasthenia or beginning to show the first evidence of serious disease of the myocardium, and it is to be hoped some additional aid will result from this work in this particular group of cases.

Dr. Hoover (in closing the discussion) said:—Mr. Chairman: I might say one word about the paroxysmal character. I have seen two or three cases of paroxysmal tachycardia in patients who had mediastinal tubercular glands. A striking thing in connection with one case was the development of meteorism coincidently with attacks of bradycardia, and the meteorism disappeared just as the attacks of bradycardia ceased. There may be some stimuli required to liberate the paroxysms, but why such a long time should elapse between the paroxysms we cannot explain on any physiologic experimentation, but it is a matter of fact, and I think paroxysmal emphysema is as difficult as paroxysmal bradycardia or tachycardia. Following that paroxysmal emphysema, which ended in death, the only symptom the man had was some dyspnea on exertion and precordial pain. He developed emphysema the night before I saw him. He died, and at the autopsy he had no emphysema. Naturally, at death the emphysema subsided. Two patients died a cardiac death, although they had nothing to betray very grave signs. It is very likely that in our case of emphysema we have a neuromuscular phenomenon which is quite analogous with the case of vasomotor phenomenon of the amputated leg of the pig where vasomotor changes were obtained after the leg had been completely amputated. In the last year or two I have had clinical pictures which do confirm the fact that atropin does cause a relaxation of the bronchi.

Dr. Hewlett (in closing the discussion) said:—Dr. Preble and Dr. Billings have so well summarized the clinical value of the polygraph that I have nothing to add to it. One may, however, of course, keep distinct the value to the person who is studying the individual patient, and the value of the instrument as a means of widening general knowledge. The hope that Dr. Preble expressed, that

it may aid in beginning myocarditis, is, I think, doomed to failure. That is, of course, the most difficult of all the big problems in cardiac pathology, and the taking of such tracings does not help us, with few exceptions.

The giving of atropin to test our patients who have irregularities, I think, is hardly practicable. Atropin will help so few and be unpleasant to so many that I think the doctors will quickly give up its use. It would be only in cases of a full dose, one-sixtieth of a grain, where it would help, and I think it would result in unpleasant experiences, the patient not being able to pass his urine.

Regular Meeting, Oct. 19, 1910

A regular meeting was held Oct. 19, 1910, with the president, Dr. Alexander Hugh Ferguson, in the chair.

Dr. Solomon Strouse read a paper entitled "Clinical Value of the Sodium Butyrate Test (Noguchi)." The paper was discussed by Dr. William L. Baum. Dr. Arthur R. Elliott read a paper entitled "Progressive Ossifying Myositis (Myositis Ossificans Progressiva)." This paper was discussed by Drs. Cubbins, Reichmann, Fort, Harpole, and in closing by the author of the paper. Dr. Walter W. Hamburger read a paper entitled "Arteriosclerotic Changes in Abdominal Vessels." This paper was discussed by Drs. Miller, Elliott, Turek, and the discussion closed by the author. On motion, the society adjourned.

DISCUSSION ON THE PAPER OF DR. STROUSE

Dr. William L. Baum was asked to open the discussion. He said: I was rather surprised when the president asked me to open the discussion on this paper. While, unfortunately, I have had a good many cases of cerebrospinal meningitis at the Cook County Hospital in which I made lumbar punctures, I have had no experience with this method of differential diagnosis. I have been very much interested in the doctor's paper because I believe it furnishes us with a means of diagnosis and a means of separating certain diseases which have many clinical manifestations of acute meningitis. We see in the course of infectious diseases, especially among children, a large number of conditions which clinically resemble meningitis, and which we believe at the time to be meningitis, but which subsequently prove to be other conditions. This is particularly true in those children who suffer from some of the complications of scarlet fever and of the other infectious diseases.

I have been much interested in this matter, and certainly it has been a pleasure to me to have heard this method of diagnosis presented to-night, and I shall certainly make use of it in my department during the coming winter. I hope we may be able to substantiate what Dr. Strouse has so ably demonstrated to-night.

DISCUSSION ON THE PAPER OF DR. ELLIOTT

Dr. W. R. Cubbins:—Dr. Elliott was kind enough to show me the case and I enjoyed seeing it very much, and since then I have had two or three cases of different types. There was one man who entered my clinic at the post-graduate about eighteen months ago who presented this form of ossification, which extended down to the coraco-brachialis, and also involved the brachialis anticus. He also had ossifications around the knee-joint in both legs. He said he was one of a family of four, three others of whom, father, brother and sister, likewise had these ossifications. He claimed to have come from Texas. After seeing him I attempted to get him to return to the clinic, but for some reason he did not return. He was one of that type of patients which goes from clinic to clinic, and I have no doubt that other men have seen this same case.

The other case I had was a young man who had ankylosed elbows, and we attempted to secure motion in these elbows, and after breaking up of the adhesions there developed marked ossification of the biceps according to the skiagram. However, there was no place where the muscle was involved. It started from the periosteum, where it was dislocated from the lower end of the humerus, and

passed up between the brachialis anticus and biceps. It was undoubtedly an affair of the intermuscular tissue.

Another patient came to me a short time after this and presented ossification of the quadriceps femoris without any history. There was no history of injury whatever, and the ossification was progressing along the normal line of ossification in the fixed connective tissue, the mass of bone lying in a jelly-like mass and this jelly-like mass in turn surrounded by a low grade of inflammatory tissue. In reading up on the subject of traumatic myositis ossificans it is stated by pathologists, with the exception of one or two, that myositis ossificans is due to an inflammation of the muscle cells, but I do not believe this is true of the traumatic type. The first stage it undergoes is that of a fibrous tissue proliferation, a change following an inflammatory reaction, and the ossification takes place in the inflamed fixed connective tissue.

Dr. Max Reichmann:—Myositis ossificans progressiva is a very interesting disease, not only from the standpoint of the clinician, but from the point of view of the radiologist, as well because it is the only condition of the muscles which can be shown by means of the Roentgen rays. I have gone through the whole radiographic literature in the last fifteen years and have found only one case of true myositis ossificans progressiva reported, and this case was published about four weeks ago from the clinic of Professor Boecky in Budapest. It was the case of a boy, aged 4 years, in which the clinicians went into great detail as regards the clinical picture, and furnished some beautiful roentgenographs which I will pass around so that you may be able to see them. The first roentgenogram shows the deformity of the great toe which Dr. Elliott spoke of. There is a bending downward of the phalanx of the big toe. The second one shows ossification of the biceps. In the second picture the ossification is connected with the humerus. In the third picture it is loose. The fourth picture beautifully shows the ossifications in the muscles of the thorax, etc. So far as the ossification in the muscles is concerned, I myself have only observed it twice. Once in the case of a hunter who had an ossification about the size of a hazel nut in his biceps. The second case I saw was in a cavalryman, who presented a so-called "Reiterknochen" in one of the adductors.

Dr. Frank T. Fort, Louisville: I saw one case of myositis ossificans in a jockey while I was engaged in teaching practical anatomy in the Louisville Medical College. He had bones developed in the adductor longus muscles of each thigh. Very recently I operated on a case which is of great interest to me and I have the pictures with me. This is a case of ischemic myositis. I have made a trip to Chicago to go to the Crerar Library and look up the literature on the subject with a view to writing a paper on it. The patient is a boy who had a fracture of the elbow joint, and a plaster-of-Paris bandage was put on too tightly, producing what is known as Volkmann's contracture. I tried galvanism and faradism for several months without any result, and then the question came up of trying to improve his hand. I resected both bones of forearm instead of doing a tenotomy and lengthening the tendons. I took out about an inch, and as that was not enough I cut off half an inch more of the bones. If Dr. Elliott or some other member can give me any literature in regard to the pathology of this disease, I will be very much obliged to him.

Dr. W. S. Harpole:—I would like to ask Dr. Elliott to tell us something about the differential diagnosis of this disease. I do not know that there is any differential diagnosis of any importance, but the only case I recall that could be confusing was one in which the case proved on autopsy to be one of myxedema. I did not see the case, but knew of it. The case occurred in Illinois in one of our larger cities in the middle part of the state. A woman had become hard all over and cold, and those who saw her described her as ossifying. Of course, this was before the days of the Roentgen ray, and with our present knowledge of myxedema, this error in diagnosis would not have occurred, but the woman died in 1895 or 1896, and the Roentgen ray as a means of diagnosis was not in common use. In this particular case there was a mistaken diagnosis and a confusion occurred. I

mention it as a matter of interest, not that I have any feeling there would be any serious difficulty in differentiating these two diseases.

Dr. Elliott (closing the discussion):—I would say in answer to the question of Dr. Fort regarding the pathology of myositis ossificans that there is very little pathology. Münchmeyer in his article in 1869 gave the pathology of the disease as it practically exists to-day. He describes the histologic changes of the disease, and there has been nothing added to the pathology since then. The disease is often known as Münchmeyer's disease. His description of it stands as a classic. Dr. Fort will find the best description of myositis ossificans progressiva in our literature in the *American Journal of the Medical Sciences*, Vol. exx, by DeWitt.

Regarding the differential diagnosis, that rests now on the skiagram, and with the use of the *x*-ray hardly any confusion can be possible, the localization of the osseous plates in the muscles by the *x*-ray being conclusive. The only question in diagnosis will be between the localized traumatic form and the progressive form of the disease. Garrod, in an interesting article some years ago, drew attention to the necessity for the appreciation of the features of the disease in its early stages. The disease begins in an anomalous way oftentimes. Patients, usually young children, complain for some months or years of anomalous symptoms. They complain of soreness of the muscles, of tender areas here and there, of nodes which come and go on the skull and the scapular spines. All of these symptoms are ephemeral until finally the ossification occurs, which may be some months or years after the beginning of the symptoms. He makes a plea for the appreciation of these odd manifestations in children when associated with congenital deformities of the hands and feet as promising eventually the development of myositis ossificans in its full form.

DISCUSSION ON THE PAPER OF DR. HAMBURGER

Dr. Joseph L. Miller:—I have been very much interested in Dr. Hamburger's paper. There is every reason to expect that arteriosclerotic changes in the splanchnic vessels would lead to functional disturbances in the gastro-intestinal tract, either in the motility of the intestines or in the secretion. However, it seems to me to be a question whether these arteriosclerotic changes of the intestinal tract produce such a distinct symptom-complex as to be able to state in a given case they are responsible for the trouble or general disturbances. I would not include in this the symptoms of abdominal angina which are characteristic. But the other symptoms described are so commonly met with in a great group of cases where arteriosclerosis can be excluded that it would seem difficult or impossible to ascribe the disturbance to arterial disease.

In regard to the treatment of this condition, with our present knowledge of the action of caffeine or theobromin or diuretin, it is difficult to explain how these remedies can relieve an attack of abdominal angina. The action of diuretin is rather a complex one, so is the action of caffeine, it primarily stimulating the vasomotor centers, not leading to uniform constriction of all vessels. It has been definitely shown that the general tendency of caffeine is to constrict vessels; that there are certain vessels which escape this constriction and are dilated in fact, including the coronary, cerebral and renal arteries. For this reason diuretin relieves an attack of angina pectoris. This dilatation of some groups of vessels and constriction of other groups of vessels can be accounted for by the direct effect on the vasomotor centers, and the dilatation by the local effect on the vessels affected. According to the information which we possess at present, the splanchnic is the one group of vessels on which the caffeine apparently acts as a constrictor. When the vasomotor center is stimulated the splanchnic vessels respond by prompt constriction, while other groups of vessels respond by dilatation. If, as Dr. Hamburger has shown, that diuretin actually produces a fall in blood-pressure, it is fair to assume that it dilates the splanchnic vessels, because if the diuretin constricts the splanchnic vessels, no matter how it dilates the arteries of the brain or coronary arteries, there would be a rise in blood-pressure. This observation made by Dr. Hamburger of a fall in blood-pressure by the use of diuretin is inter-

esting because our text-books make the statement that diuretin in moderate doses causes a rise in blood-pressure. In large doses it lowers blood-pressure, but Dr. Hamburger found in his experiments that he was not able to give a dose that would raise the blood-pressure. The small doses were without effect, and when he got the physiologic effect it manifested itself in the form of a distinct fall in blood-pressure.

Dr. Arthur R. Elliott:—This is a type of case that very much needs elucidation, and Dr. Hamburger is to be very much commended for his excellent report. There is a large class of cases constantly coming under observation which may be called essential arterial hypertension, but which ordinarily bear the diagnosis of chronic nephritis because some time or other during the progress of the disease these patients have a little albumin in the urine and casts and they have high arterial tension and cardiac hypertrophy. These are not cases of chronic nephritis, notwithstanding the urinary indications. They do not present polyuria, the poor thin urine, and the toxic indications of nephritis. They are cases I doubt not, to a considerable extent of the type Dr. Hamburger describes, namely, abdominal or splanchnic arteriosclerosis. They present a fixed type as a rule. They are plethoric, large girth, short neck, and have considerable ranges of blood-pressure above the normal. These cases, since the work of Hirsch and Hasenfeld, who claim on clinical and anatomic grounds that they are splanchnic arteriosclerosis, or arteriosclerosis of the aorta above the diaphragm, have been classed tentatively as cases of that kind. The range of blood-pressure in these cases is often extreme, and more than any other they seem to be subject to the so-called hypertensive crises, accompanied often by the phenomena described by Dr. Hamburger as abdominal angina.

Regarding the use of theobromin, I have had a very limited experience with it, but this I have noticed, that in bad cases of arterial hypertension theobromin salicylate is occasionally of great benefit. Especially have I been pleased in a few instances with a combination of aconite with theobromin salicylate. The combination is a little paradoxical perhaps, but it can be used oftentimes with great satisfaction in cases of plethoric individuals with high tension of the abdominal type, where the hard-working heart is strongly pushing against the barrier of increased peripheral resistance. By using aconite to obviate to some extent the cardiac overwork, and theobromin for its vascular effect, a happy result can sometimes be secured.

Dr. Fenton B. Turck: This is a valuable paper, for the reason that it does not rely merely on symptoms and the clinical history for demonstration of a condition which is more prevalent than we have heretofore believed or known about. The microscopic examination and the findings make this a valuable presentation. It is very difficult sometimes to make a differential diagnosis in these cases, but it can be done in some instances. I remember the case of splanchnic arteriosclerosis which presented itself to me in which a careful examination revealed the existence of an intense pain which is characteristic of the early stages of tabes. It is difficult in the beginning to know whether we are dealing with splanchnic arteriosclerosis or with tabes. We may make a diagnosis of splanchnic arteriosclerosis when the case is found to be tabetic in character.

I recall the case of a man supposed to be tabetic who had been constipated all of his life. He had not indulged in any alcohol. In this case a diagnosis of splanchnic arteriosclerosis was made. We put him on a low diet, but before we saw him again he had a severe hemorrhage, from which he died. A post-mortem examination was made which revealed arteriosclerosis of the splanchnic vessels, especially of the stomach and intestines. I want to make the practical point that we should not be too anxious about using gastric lavage in these cases, because the use of warm water may cause trouble. I never pass a stomach tube in any of these conditions.

Another interesting point noted in connection with post-mortem examination of this case was that we found thrombosis of some of the gastric vessels, but no ulcers of the stomach. I mention that because very often we have been looking

on the etiology of gastric ulcer as due possibly to some changes in the local vessels themselves. It has been thought that in true peptic ulcer extensive arterial thromboses form first, but that is not true in the majority of cases of peptic ulcer. It is a significant fact that the same conditions that favor intestinal bacterial growth are etiologic factors of both arteriosclerosis and peptic ulcer. However, the one may occur without the other.

As to the etiology of these cases, they give a history of constipation with more or less intestinal auto-intoxication, and we may look on these conditions as being largely due to intoxication affecting the vessels in which there is breaking down of the endothelium, and as the final effect autolysis of the tunica media may occur. In the building up of the intima the endothelium is renewed, but the tunica media is filled in with connective tissue. It is not a true inflammatory process, but an autolysis of the cells and rebuilding of these areas by connective tissue. That is important in considering the etiology in relation to the care of intestinal diseases. The diet must consist of rice and vegetables, but not vegetables such as potatoes containing too much salts, as there is too much work imposed on the kidneys. We should give a minimum amount of extractive of meat (as soups) which favor intestinal toxemia.

Great care must be taken in the preparation of the food. It should be bland and non-irritating and pass rapidly along the alimentary tract. Vaseline and agar-agar, which are non-irritating, will prevent bacterial growth and allow elimination. Water used for colonic lavage must not be of such a high temperature as to cause splanchnic congestion, but water moderately high in temperature should be used in keeping the lower colon empty and stimulating the circulation.

I have seen a number of these cases, and we can rest assured that by more careful observation we will find more of these conditions clinically than we have in the past. In considering the differential diagnosis, the point must be borne in mind that in the beginning of tabes the pains of a neuralgic character come on suddenly and disappear with or without treatment almost as rapidly as they appear. In arteriosclerosis of the splanchnic area, the pains are more often associated with the disturbances of digestion and more promptly respond to treatment.

Dr. Hamburger (closing the discussion):—With reference to the remarks made by Dr. Miller, it would take a larger series of experiments with theobromin and diuretin to strengthen the conclusions arrived at that a fall in blood-pressure is always obtained by the injection of physiologic doses of the drugs.

Regular Meeting, Oct. 26, 1910

A regular meeting was held Oct. 26, 1910, with Dr. A. Belcham Keyes in the chair.

Dr. J. P. Houston read a paper entitled "The Commitment and Care of the Insane of Cook County." (See p. 608.) This paper was discussed by Drs. Willhite, Davis, and in closing by the author the paper. Dr. John L. Porter read a paper entitled "Acute Epiphysitis of the Hip." (See p. 605.) This paper was discussed by Drs. Ochsner, Ferguson, and in closing by Dr. Porter. Dr. Charles E. Paddock read a paper entitled "Uterine Myomata and the Puerperium." This paper was discussed by Professor Nagel, of Berlin, Germany, Dr. Ferguson and Dr. Keyes, after which the society adjourned.

DISCUSSION ON THE PAPER OF DR. PADDOCK

Professor Nagel of Berlin, Germany, was asked to open the discussion on this paper. He said: I think we are greatly indebted to Dr. Paddock for this very interesting paper in dealing with fibroid tumors complicating the puerperium. This complication is comparatively rare. I quite agree with Dr. Paddock that in most cases we should allow pregnancy to go on to full term. It is very rare that abdominal section has to be resorted to in these cases before full term. Taking the cases in the largest clinics in Berlin that presented themselves during twenty years, probably amounting to 60,000 cases, I cannot give you the exact figures. I do not remember a single case in which we performed abdominal section at full

term for the removal of the fibroid. If the fibroid is situated low down in the pelvis, it may be lifted up by the growing uterus and not cause any complication. In the case of an impacted fibroid, the question will arise whether we should interfere early or allow pregnancy to go on. The decision of that question must rest with the patient and the members of her family. We must put the matter before the mother and relatives and tell them that if they desire a full-term child they must be prepared for Cesarean section. If they do not want this operation, it may be necessary to remove the uterus with the fibroid. I do not think abortion is justified in a case of fibroid complicating pregnancy. If we interfere at all in the early stage of pregnancy complicated with fibroid, it is better to remove the uterus with the fibroid.

As to the fibroid tumors sloughing after labor, I have seen this several times. Much depends on how far the infection has gone. A sloughing fibroid should be removed as soon as possible, but it is a question whether it is better to remove the uterus with the fibroid or only remove the sloughing fibroid. I think the latter method is the better course to pursue.

Dr. Alexander Hugh Ferguson:—The subject brought forward by the essayist, Dr. Paddock, with regard to uterine myomata complicating the puerperium, is one that interests not only the obstetrician, the general practitioner, the gynecologist, but the surgeon. I have had the good fortune of having a number of these cases. We may say, first of all, that myomata interfere with parturition principally in the way of obstruction. I presume it is unnecessary to go into the subject of myomata interfering with maturation of the fetus. That is a broad subject by itself, such as producing abortion and other conditions, where the myomata have to be interfered with before the period of parturition occurs. I have had to remove myomata per vagina and through the abdomen interfering with parturition at the full term of childbirth. Those myomata that interfere with the lower strait of the pelvis are cervical in origin, and they are usually those of the variety that develop in and multiply in the cervix itself. Those that are of a polypoid nature can be dealt with at the time by any man who is aseptic and antiseptic in his habits without interfering with parturition. Then we have those that develop in the muscular tissue of the cervix, and these are very much more difficult to deal with. They interfere with parturition very materially, and we may have to enlarge the outlet of the vagina and enucleate them at the time of parturition, then deliver the child or allow the child to be expelled by the natural process. There, of course, we have no such thing as a subperitoneal fibroid. They are either intramural or submucous. The submucous variety are easily dealt with and the intramural are the difficult ones I speak of. When these tumors interfere with parturition in the upper portion of the uterus, in the body of the uterus, they are either intramural or subperitoneal. The submucous ones, as a rule, may interfere with the development of the uterus, and abortion may take place, but you know that the intramural ones in your experience almost invariably get less and less in size as the development of the fetus takes place.

I recall the case of a woman whom I saw twelve years ago. She consulted me as to the advisability of removing an intramural fibroid at the fundus of the uterus. She had borne two children. Every time she became pregnant the tumor became less and less in size. I advised her to go on and have her child. The tumor developed and increased in size after the child was born, but did not interfere with the birth of the child. It grew less and less when she was carrying the child. That woman has gone on in that way until she has had now six children. Why not let her go on? Do not interfere with these intramural fibroids unless they interfere with the child or with the woman. I have had several cases where I have removed a large number of fibroids. I have one case now that I reported where I removed nine intramural fibroids from a woman who has had six children since. I removed them through the vagina. These intramural fibroids in the child-bearing period, unless they interfere with the health and life of the patient, or produce repeated abortions, should be left alone. That is my experience.

The submucous variety of fibroids are liable to become twisted and become gangrenous, so that you have to remove them by the abdomen. I have had three

cases of twisted pedicle from subperitoneal fibroids interfering with pregnancy. One of them weighed six pounds and was pressing on the stomach and heart, the pedicle became twisted and gangrenous, interfering with the patient's life and threatening abortion. In this case we had to interfere at the sixth month of pregnancy. We removed it. The woman went on to full term without any trouble.

I have had a number of cases, not very many, of sarcomata of the ovary interfering with pregnancy, where I have had to remove the sarcoma of the ovary, and the woman went on and bore a child all right.

As I previously said, this subject is a very broad one from an obstetrical, gynecologic and surgical standpoint, and it requires the broadest knowledge of the subject to determine when and when not to interfere.

Dr. A. Belcham Keyes:—I would like to mention a case of fibroid complicating pregnancy which I saw while I was associated with the late Dr. Henrotin. The fibroid was about half the size of a fist. The woman went through her pregnancy without other complication, the child was delivered spontaneously at term, and later examination revealed the fact that the fibroid had entirely disappeared. In this case the abdomen was opened by Dr. Henrotin at about the third month of pregnancy for the purpose of removing the fibroid, but finding the woman was also pregnant he did not interfere with the fibroid, but simply reclosed the abdominal opening. I believe in such cases the woman should always be allowed to choose between removal and the continuance of pregnancy to term. Other undoubted cases of disappearance during the puerperal involution are on record. While the disappearance does undoubtedly occur in some cases, there are also cases of very rapid growth of the fibroid in pregnancy and the obstructive complications in labor that must always be carefully borne in mind.

DISTRICT MEDICAL SOCIETY OF CENTRAL ILLINOIS

Thirty-Seventh Semi-Annual Meeting, held at G. A. R. Hall, Pana, Oct. 25, 1910

The meeting was called to order by President R. C. Danford. Dr. E. W. Brooks, of Beecher City, presented a patient for examination. After a careful examination by several members, it was decided that the patient was suffering from cancer of the pyloric end of the stomach. The society then adjourned to take an automobile ride over the city, after which they again assembled, and Dr. L. L. Morey, of Vandalia, read a very interesting paper on "Diet in Stomach Affections." The doctor gave us some very valuable and instructive points on diet. In the discussion by Drs. Jack, Beatty, Barnett and Parrish some valuable information was brought out. Dr. F. J. Eberspaecher then presented a rare case of a patient with a very large melanosis of the head.

The society then adjourned to assemble in the dining-hall to partake of the sumptuous banquet given by the local members of the society and prepared by the ladies of the Presbyterian Church. After doing justice to the banquet, the members again assembled in the hall and the regular order of business was taken up. The minutes of the previous meetings were read and approved. A vote of thanks was tendered the local profession and the ladies of the Presbyterian Church for the delightful banquet they had served. A vote of thanks was also tendered the members of the Pana Auto Club for the fine ride they gave us.

The Board of Censors presented the names of Drs. E. F. Wilhelmy, A. C. Keener and Hazel for admittance to the society. On motion, they were duly elected to membership. The committee appointed to draft resolutions of condolence on the deaths of our former members, Drs. J. J. Conner and J. H. Huber, made their reports, and on motion the resolutions were accepted. The chair then appointed Dr. M. P. Parrish as a member of the Board of Censors to fill the vacancy caused by the death of Dr. J. H. Huber.

Mr. Thorburn, a noted chemist of Indianapolis, Ind., then read an instructive paper on "The Standardization of Drugs by Chemical Assay." He gave us some very important points as to why drugs should be standardized and why it should be required by the state boards. He showed the relationship of plant and animal

life by illustrated microscopic charts. He then gave us a demonstration of extracting the white alkaloid from hydrastis. The paper was discussed by Drs. Barr, Carroll, Barrett, Cox, Wood and Hazel.

Dr. C. W. Barrett, of Chicago, then presented a paper on "The Injuries of the Pelvic Floor and Their Effect on the Functions of the Body." His paper was one of the best that has ever been read before this society, and the manner in which he presented it won the closest attention of every one present. He fully explained his operations, which were entirely different from some of the older ones, and exhibited colored charts illustrating the different steps in one of his operations on the pelvic floor. He emphasized the importance of repairing the injuries when they were first produced, and the relief the patient obtained after operation in long-standing cases.

The paper was very ably discussed by Drs. Deal, Kreider and J. H. Miller. The next paper was read by Dr. M. W. Staples, of Grove City, on "Operation for Umbilical Hernia and Its Results." In the discussion by Drs. Wood, Kreider and Martin, they cited cases in which they had operated under very bad surroundings and lots of dirt, and while all the patients made good recoveries, they would not recommend operation under these conditions if avoidable.

OPERATION FOR UMBILICAL HERNIA AND ITS RESULTS

M. W. STAPLES, M.D., GROVE CITY

In presenting a paper on this subject, it is not to deery the perfect arrangements in our hospitals for surgery, nor to make light of antiseptic surgery, but to show what Nature and care can do in a common country home.

About 4 a. m., Aug. 25, 1909, I was called to see Mrs. Stewart, of Bolivia, whose age was 48, the messenger saying that she had a strangulated hernia. I went as soon as possible, and on arriving at the home found that it was umbilical, and the enlargement was black, even the superficial tissue, and that during the night hot poultices had been used constantly to induce it to return to its proper place in the abdomen. I at once ordered ice and packed it in oil cloth, applied a large amount to the tumor, and advised the family that she could be relieved only by operating, which they said they did not want done, but to tell her and do as she said. As soon as informed of her condition and the means recommended by me, she said: "Doctor, do all you can to save my life and do it as soon as possible, for I cannot stand this thing much longer." So I called Dr. George N. Kreider, of Springfield, advising him what to expect. He came as soon as he could, getting to the house at 10:30 a. m. I had everything ready. We prepared her by giving chloroform as an anesthetic.

Dr. Kreider cut down, removed a large strip of abdominal tissue perpendicularly 8 inches, and the transverse cut was about 16 inches long; on getting to the guts, found them black and giving off a very offensive smell. They were beyond recovery. So it was decided to resect them. He removed about 16 inches of the colon. A side-to-side anastomosis of the gut was made. The ends were closed. The Mayo radical operation on abdominal wall was done. Every layer of muscle was sewed together, and finally closing the skin so that we thought it was firm, and as neat a job as one often sees.

The morning of the 26th I found that she had passed a fairly good night, not even having had any vomiting spells from the anesthetic. Pulse 90, temperature 100. At 5 p. m. temperature 100.5, pulse 90, but feeling very good. The 27th, a. m., still feeling pretty fair; temperature 100, pulse 86. The 28th, temperature normal. So it continued from day to day, until September 3, when I found, on opening the dressing, a foul smell. Removing a stitch, a lot of black pus escaped, showing that a blood clot had formed deep down in the cut, and had broken down and caused the pus. After cleaning out with sterile water, I packed the cavity full of a 5 per cent. iodoform gauze, returned in the evening and removed the packing and redressed. I did so for ten days, when I found the cavity closing up and pus stopping. Dressed every day for twenty days, then every other day for about the same time. Then it was nearly closed, but still a little space. On

probing, found a silk or cotton thread, which for want of catgut had to be used. I removed two such, after which the opening closed and gave me no further trouble.

I want to say that this operation was done in a farm home. No arrangements but such as were very crude did we have. The table was made from lumber picked up in the yard and washed with concentrated lye, dried in the sun and a bed comforter spread over it. Nor did we have a nurse; only a daughter to nurse. The patient was a big woman, her weight being 200 pounds. In spite of this the patient made a fine recovery, and to-day is well and in fine health. Dr. Kreider, who did the operating, brought to assist him Dr. Asehauer.

Mrs. Stewart had an attack of uremia some three years before, when she was out of her head for five days. This, coupled with the unfavorable surroundings, makes it more remarkable that she recovered.

Dr. M. P. Parrish, of Decatur, then read a very able paper on "Hernia." The doctor said that he had written his paper on very short notice, and did not know how satisfactory it would prove to be, but he covered the subject in a very masterly manner, and gave us the technic of his operation fully. The doctor has operated on 200 cases, with only five deaths. Drs. Kreider and Wood gave us a very fine discussion on the paper.

Dr. G. N. Kreider, of Springfield, exhibited some very fine *x-ray* plates of different conditions. Dr. E. F. Wilhelmy, of Decatur, then gave us a short talk on the "Uses of Dr. Maus' Prophylactic Tubes as Used in the Army," and also exhibited a tube. On motion, Dr. Barrett and Mr. Thorburn were unanimously elected to honorary membership of the society. Adjourned to meet in Pana the last Tuesday in April, 1911.

DIET IN STOMACH AFFECTIONS

L. L. MOREY, M.D., VANDALIA

In the discussion of diet in stomach affections I hope that I may not be limited to diet alone as curative of stomach complaints, or to a complaining stomach alone in the very common ailments of patients. Having passed through a number of severe ordeals in the past few years, I must not be judged harshly if I assert that I believe that in the very nature of things no physician is thoroughly competent to treat and cure stomach affections unless he himself has had a severe chronic stomach ailment.

The remedial treatment of stomach affections I think must be considered from two standpoints: right living and right thinking. The average individual when the doctor mentions diet thinks of starving. Most people are looking for happiness in self-gratification, but are sorely disappointed.

Now, as to diet in stomach disorders. I contend that the physician who pays no attention to diet in the treatment of any disease but stomach diseases can never hope to become a skilful practitioner. A physician should supply himself with all the newest and best works on diet and stomach diseases. All chronic stomach diseases require careful treatment in diet and medicines. There are no two persons who can exist with profit and pleasure on precisely the same diet.

The following are good fundamental rules:

1. It is not so much *what* one eats, but *how* one eats.
2. Each individual must be a law unto himself.
3. Attempt to mix foods properly. Never mix sweet and sour foods at the same meal.
4. Do not use much fried diet. Broil, boil, bake or stew all meats.
5. Cook fruits without sugar and add sugar afterward. Fruit sugar is more nutritious than cane sugar. The white of an egg is almost entirely pure albumin and is more easily digested raw than cooked. The yolk of an egg is the most nutritious, but must be well cooked.
6. Of the two evils, hot or iced drinks, the latter are to be preferred. Drinks should not be taken into the stomach over 110 F. nor under 55 F. If you will strictly adhere to this rule, you may avoid many stomach troubles. Do not

drink to wash down the foods, but chew and mix them thoroughly with the saliva and drink afterward. Most stomach ailments come from inefficiency and faulty insalivation, as well as overfeeding, and we may safely assert that barring accidents all our sickness comes from a vicious dietary and mental worry. By some physicians fasting is considered a panacea for all human ills. In no branch of her work can the nurse be of more service than in her ability to feed a sick patient properly. In judging the patient's appetite it must be remembered that what is supposed to be a lack of desire for food is possibly due to defective cooking. Serve meals at proper times and select food which is to the patient's liking. It is the province of the nurse to differentiate such matters. It is the nurse's function to watch the patient's appetite, digestion and likes and dislikes for different foods, she being governed by the physician and a report made to the physician. The nurse should understand that it is as important to give food as medicine at regular intervals. Among the first considerations is the proper quantity of food to give. Milk has a decided advantage of all foods. When the appetite flags it is not wise to ask the patient each time what he would like to eat. It is best for the nurse to prepare the proper food and give it. Hot foods should be served hot, not luke-warm. A fastidious or nervous patient may have the appetite destroyed by the nurse who does not present it properly with clean hands, clean dishes, clean cups and glasses and everything inviting. These may appear trivial, but are very important to a patient who is seriously ill. Sometimes a patient will eat more if the food is served in courses and not all presented at one time. It may be well at times to have a patient sit up to have his meals. As a rule, patients need more salt as a condiment and less sugar than those in health. Do not feed a patient with the same glasses or cups that medicines are given from. The nurse should be cheerful and divert the patient's mind from his ailments while feeding him. In giving a drink of water or liquids the glass should always be small and not more than half filled. If a patient is unable to sit up a feeding tube or feeding cup with spout can be employed. Under ordinary circumstances a patient should not be roused up to take nourishment, as sleep is more beneficial than food. After eating the mouth should be rinsed with pure water, hydrogen peroxid or diluted listerin or some antiseptic solution. Milk, especially, lingers on the mucous surfaces and fermenting destroys the sense of taste and develops germs that interfere with digestion. Dryness of the lips should be relieved with vaselin. All dishes should be properly disinfected by boiling before being used again; especially is this so in contagious and infectious diseases. In feeding comatose patients, fluid nourishment may be poured into the nostrils with a spoon, or a tube may be passed through the nose into the stomach and liquid given through it, care being taken not to insert the tube into the wind-pipe. It is possible to feed or sustain the patients by nutrient enemata, especially when there is obstruction to the entrance of food into the alimentary canal. Of late years it has been shown that in case of collapse salt-water injections may be given into the rectum or under the skin with great advantage. There should be a mutual relation between food and medicine, a certain time for giving drugs and foods. The reaction of the stomach contents varies from alkaline to neutral and acid, and these relations act on medicines in various ways. A drug given after a full meal may aid digestion, but be inert if given on an empty stomach. Certain medicines retard digestion and should not be given after a meal. Alkalies are better given shortly before meals unless intended to neutralize acidity. Acids should be given sometimes after meals. Remedies designed to aid intestinal digestion should be given after gastric digestion is completed. The main principle of feeding the sick involves the avoidance of all articles that disagree with the condition present and to relieve the digestive organs of unnecessary labor and to sustain the system. Special foods may be given for certain diseases, as fruits and vegetables in scurvy and fats and oils in tuberculosis. Fluid forms of food should be given in fevers. A general rule for dyspeptics is:

1. Eat slowly, masticate thoroughly.
2. Drink fluids an hour before meals or two or three hours after meals.
3. Eat at regular hours.

4. If greatly fatigued, lie down and rest before and after meals.
5. Avoid as much as possible business worries or cares at the table.
6. Take exercise in the open air each day.
7. Keep the bowels regular with laxative foods if possible.
8. Avoid too much variety at any one meal; certain foods if taken alone may agree well, but if mixed with other foods may be injurious.

HERNIA

M. P. PARRISH, M.D., DECATUR

The term hernia, meaning off-shoot, protrusion or projection from the surrounding surface, may be applied to any part of the anatomy. Inguinal hernia, of which this paper will principally deal, is the most frequent type; was formerly supposed to be due to some injury, such as a strain in lifting, falling, jumping and traumatism. It is now believed to be due to some congenital defect in the majority of cases, and the exciting cause plays only a minor rôle.

A hernia is composed of three parts: the sac, the covering of the sac and the sac contents. The sac, of course, is always the peritoneum. The contents of the sac may be bowel, omentum, ovary and tube. In fact, Coley says "every organ in the abdominal cavity has been found in the hernial sac except the spleen and pancreas." In oblique inguinal hernia the sac bears a constant relation both to the cord and the overlying structure. It always lies anterior to the cord and the cord vessels and is surrounded, in common with the latter, with a thin layer of the infundibuliform fascia. Next from within outward comes the cremasteric fascia, muscles, then the superficial fascia and skin. In inguinal hernia in the female the sac bears the same relation to the round ligament as it does to the cord in the male. It lies directly over or in front of the round ligament, and very closely attached to it. In direct inguinal hernia in the male, the sac emerges through the abdominal wall, below the epigastric artery, through the external inguinal ring. It is a ventral hernia, and the sac pushes the cord in front of it, or to one side, and bears no such strict relation to the cord, as in the oblique variety. We have four varieties of the inguinal hernia. The diagnosis of a reducible hernia is very simple, if we keep these physical signs in mind. A tumor at the external inguinal opening, that gives an impulse on coughing, that disappears in the reclining position, or by manipulation or taxis. Varicocele is most liable to be confounded with reducible inguinal hernia. With your permission, I will diverge one moment to speak of the differential diagnosis between femoral hernia and saphenous varix, as I made an error in one of these cases. Both disappear in the reclining position, and can be reduced by manipulation, and both have an impulse, but if we will remember these two points there will be little trouble in making a diagnosis: 1. The impulse is different; instead of an impulse suggesting a solid body being forced against the fingers, it has a thrill, as fluid being forced through a compressible tube. 2. If the tumor is reduced and the pressure kept up, not too strong, but sufficient to retain the hernia, and the tumor returns, you have a saphenous varix, and it is also well to examine for varicose veins. In irreducible or "invaginated" hernia the diagnosis may be difficult or impossible. Here we have to consider hydrocele, varicocele, adenitis, tubercular lymphangitis, lipoma, cysts and cold abscess. With all of these conditions there is never the history of reducibility. They do not come and go as in hernia, and in none do you get the impulse, nor can they be traced to the inguinal canal, excepting possibly hydrocele of the cord. In this you have the transmission of light and fluctuation. If there is a serous effusion into the hernial sac, there will be symptoms of strangulation. There should be little trouble in diagnosing strangulated hernia. If a bowel is strangulated, there are at once the symptoms of obstruction. If the omentum, we soon have the dragging pain, with the serous effusion, tenderness and nausea, if not vomiting. If the ovary is strangulated, there is the peculiar pain complained of when these organs are compressed. There is nothing special in diagnosing inflamed hernia.

TREATMENT

The treatment for hernia is either mechanical or operative. I believe there are few physicians who are capable or competent to apply a truss. In my opinion a spring truss should always be used, either of hard rubber or steel covered with leather, and the mistake we most all make is getting our trusses too low and attempting to control the hernia at the external ring, instead of at the internal. If we get a truss of the proper size and one that retains the hernia, it often gives the patient not accustomed to it such pain that it is unbearable. We can do much to aid his discomfort, if we will gently bend the spring back and forth, or as it were, limber it up. After applying a truss, we should instruct our patients to go out, walk around or return to their usual occupation, but to return to us in the course of two or three hours for examination and probably some little readjustment, and it is well to keep them under observation for several days. Now, of course, the question arises, for what patients shall we advise operation or recommend the use of a truss? No child under 5 years of age should be operated for hernia, unless it is strangulated, or there is an irreducible hydrocele and a truss cannot be applied. A spring truss can be fitted on a child just as easily as a grown person, and all that is required is a little tact and patience. There is very little danger of strangulation in children, and in many cases there is a spontaneous cure, and the dangers of an operation are avoided. In patients with some constitutional disease or defect, where the anesthetic or operation would be dangerous to life, operation should not be thought of unless there be strangulation. When the abdominal muscles and aponeurosis are thin and weak, operation would be folly, for as soon as one place is repaired another gives way. Neither should operation be suggested to the aged or infirm, unless there be strangulation. Others than these will be greatly benefited and far safer with a radical operation properly performed. Under modern methods the mortality is less than .5 per cent. and the percentage of cures is above 95. With these figures before him it does not look reasonable that any one should go through life with such a dangerous and disabling malady. There are probably no two operators that do the same operation, but there is in all a great deal in common. The principles aimed at in hernia operations are: first, the careful and complete dissection of the sac; second, the avoidance of injury or destruction of nerves and arteries supplying nourishment and stimulation to the pillars of the canal; third, the proper suturing of the internal oblique muscle to Poupart's ligament and uniting the fascia; and fourth, primary union. Previous to 1890 operation for radical cure of hernia was looked on with disfavor by the best and most conservative men, even after the great discoveries of asepsis and antisepsis by Lister and Pasteur. The mortality following operation was 7 or 8 per cent. and the recurrence within one year was about 40 per cent. About that year Halstead and Bassini published their articles, and to them, and especially to Bassini, the credit is due for the modern operation for inguinal hernia. Halstead advocated dissecting the sac and transplanting the cord between the aponeurosis of the external oblique and the superficial fascia; while as you know Bassini transplanted the cord beneath the aponeurosis. Another difference and the greatest fault with Halstead's operation: he advised cutting the internal oblique muscle upward for about one inch. Experience has taught that this tissue is the one on which we most rely and it should not be injured or destroyed. Another thing that we have learned is that implanting the cord is not such an important matter unless there is a very large and voluminous hernia. In that case it is better to transplant the cord. Several years since, Dr. Wyllys Andrews advised lapping of the aponeurosis. This I think a very valuable aid, as it increases the strength materially. The operation usually done by me is as follows: After cutting down through the skin and superficial fascia, I split the aponeurosis of the external oblique upward from the external ring about 2 inches and dissect it loose down to Poupart's ligament and upward off the muscle, for about 2 or 3 inches, then split the muscle up about the same distance, find and dissect out the sac, carefully separating it from the cord. If the hernia is not a large one, I then drop the cord back into its usual position, suturing the internal

oblique muscle to Poupart's ligament with interrupted stitches of kangaroo tendon. Then the upper cut edge of the aponeurosis is sutured to Poupart's ligament, with a continuous suture of formalized catgut. Then the lower edge of the aponeurosis is lapped over and sutured to the external surface of the aponeurosis above. The skin is then united with catgut, dressing and figure-eight bandage snugly applied. If it is thought best, the cord is transplanted beneath the aponeurosis, as in the Bassini operation, but I always take one or more sutures above the cord and lap the aponeurosis as described above.

FULTON COUNTY.

The Thirteenth Annual Meeting of the Fulton County Medical Society was held in the G. A. R. Hall in Canton Oct. 4, 1910, and was called to order by Vice-Pres. Veda C. Murphy. Minutes of July meeting were read and adopted.

Treasurer's report showing a shortage of \$104.16 was read and the Chair appointed Drs. Regan and Parker as auditing committee.

Application for membership from Dr. R. P. Grimm of Glasford together with release from Peoria County was read and referred to the membership committee with instructions to report at this meeting.

The following officers were elected: President, J. C. Coleman, Canton; 1st V.-Pres., D. D. Kirby, Canton; 2nd V.-Pres., V. C. Murphy, Cuba; Sec.-Treas., D. S. Ray, Cuba; Necrologist, P. H. Stoops, Ipava; Membership Com., H. H. Rogers, Canton; Membership Com., to fill vacancy, J. R. Chapin, Canton; Board of Censors, A. C. Cluts, Ellisville; Legislative Com., W. E. Shallenberger, Canton; Delegate to State Meeting, D. S. Ray, Cuba.

Pursuant to notice given at the July meeting the following amendment to the By-Laws was adopted:

ART. V. BY-LAWS.

The initiation fee shall be five (5) dollars which shall cover the first year's dues. The annual dues shall be five (5) dollars. Any member who shall be in arrears for one or more years dues shall not be eligible to vote.

The Auditing Committee's report was adopted. Necrologist Stoops asked for time to make up report concerning the death of Dr. Martha Richardson and moved that the Chair appoint a committee of three to draft resolutions of respect. The Chair appointed Drs. Stoops, Parker and Chapin as this committee. President Robb having arrived called President-elect Coleman to the Chair and presented the President's Annual Address.

Noon hour having arrived all present boarded an interurban car and were taken to the Chautauqua dining hall where an unusually sumptuous dinner was served to forty-four very good eaters. After dinner the same car carried the crowd back to the G. A. R. Hall. Dr. Sutter of St. Louis phoned that he had missed the train in Peoria and on account of bad roads could not get any one to bring him on to Canton and would have to return home, but would be glad to come again at any time that the Society wished. Dr. Channing Barrett of Chicago presented a very instructive paper on "Osteotomy in Obstetrics." Discussion was led by Drs. Stremmel and Rogers. A unanimous vote of thanks was tendered Dr. Barrett for his very profitable visit. Dr. Percy of Galesburg gave a very interesting paper on "The Relative Influence of Law, Religion and Medicine in the Progress of the Human Race." Dr. C. E. Ruth of Porto Rico was introduced and gave an excellent talk on medical conditions as he found them on the island. Dr. Parker presented a case of extreme jaundice and Dr. Welch one of tumor of the tongue.

Dr. Shallenberger made a report of the legislative committee which included the reported opposition of Congressman Prince to the Owen bill. Report adopted and Dr. Shallenberger was instructed to confer with Congressman Prince and ascertain his attitude toward the Owen bill and other matters pertaining to medical legislation in Congress. Dr. Shallenberger moved that a vote of thanks

be given to the visitors, the Interurban Railway, G. A. R., and the Chautauqua Association. Carried. Dr. Oren moved that the President, Vice-President and Secretary be the programme committee. Dr. Barrett conducted a very instructive clinic in the Graham Hospital.

(A local paper took Dr. Shallenberger's report as the basis for an abusive attack through its columns on Dr. Shallenberger personally. There was nothing in the report to justify the abuse of any one, but had there been, it should have been the Fulton County Medical Society and not just one of its members. Dr. Shallenberger's action was an action of the Society and referred to the reported support of our Congressman in assisting the West-Pointers to defeat the Owen bill and discourage the recognition of the profession at large in Governmental positions. Although the report was considered authentic no censuring action was taken, but that no injustice be done Congressman Prince a personal interview was ordered with him before the Society took any action on the question. Sec.)

D. S. RAY, Secretary.

The following Committee report was adopted by the Fulton County Medical Society at its annual meeting held in Canton Oct. 4, 1910:

Death inevitably teaches us its lessons concerning life and mortality and when the especially useful member of society is called hence we bring to mind with both pain and pleasure the influences and characteristics of that individual. Since this is especially true of Dr. Martha A. Richardson, be it

Resolved, By the Fulton County Medical Society: That we deeply deplore the loss of a member of this Society, a friend and counselor that exemplified all that was best in the able, well qualified, energetic, ethical and conscientious practitioner of medicine. That we extend to the bereaved relatives and friends our professional sympathy and beg to share her memory as a cherished inheritance. Be it further

Resolved, That a copy of these resolutions be spread on the minutes of this society and a copy be sent to the relatives of Dr. Richardson.

P. H. STOOFS,

L. R. CHAPIN,

E. W. REGAN,

Committee.

Among those present were the following: W. D. Nelson, Canton; R. J. Grimes, Marietta; R. T. Ewan, Smithfield; J. W. Welch, Cuba; P. S. Scholes, Canton; A. C. Chuts, Ellisville; L. V. Boynton, Vermont; E. S. Parker, Vermont; R. P. Grimm, Glasford; C. G. Turner, Brereton; H. H. Rogers, Canton; E. W. Regan, Canton; L. R. Chapin, Canton; E. M. Price, Astoria; E. E. Davis, Avon; E. F. Brewer, Farmington; W. S. Strode, Lewistown; A. P. Standard, Canton; Nellie G. Robb, Farmington; Veda C. Murphy, Cuba; Jennie W. Parks, Fiatt; Channing W. Barrett, Chicago; Mrs. P. S. Scholes, Canton; Mrs. C. N. Allison, Canton; R. W. Harrod, Avon; P. H. Stoops, Ipava; C. D. Snively, Ipava; W. E. Shallenberger, Canton; D. D. Kirby, Canton; D. S. Ray, Cuba; F. C. Robb, Farmington; S. A. Oren, Lewistown; F. M. Harrison, Bryant; W. T. Zeigler, Canton; J. M. Adams, Canton; W. R. Blackburn, Breeds; N. W. Miller, Cuba; C. S. Stremmel, Macomb; V. D. Crone, Canton; C. E. Ruth, Porto Rico; G. S. Duntly, Bushnell; J. C. Coleman, Canton.

HENDERSON COUNTY

The Henderson County Medical Society met at Stronghurst, November 7, 1910, at 2 o'clock, in Dr. Harter's office. Members present were Drs. I. F. Harter, W. J. Emerson, A. E. Lanver, Edwin E. Bond and J. P. Riggs. Dr. Clyde C. Findley, of Galesburg, presented a paper on the drainage question which was discussed by all the members present. Dr. I. F. Harter read a paper on "Punctured Wounds," which was also discussed by all the members. The meeting adjourned to meet at Stronghurst the first Monday in May, 1911.

JACKSON COUNTY

The November meeting of the Jackson County Medical Society was held in the parlors of the Jackson Club in Murphysboro Thursday, Nov. 17, 1910. Present: Drs. Grizzell, Horstman, Molz, Wayman, Ormsby and Essick of Murphysboro; Dr. McAnally of Carbondale; Visitors: Dr. Lightfoot, Carbondale; Dr. W. W. House, Oraville; Dr. John Green, Jr., St. Louis.

It was moved by Dr. Molz and seconded by Dr. McAnally that the secretary be instructed to extend a vote of thanks to the management of the Jackson Club for their many kindnesses in allowing the society the use of the rooms for our meetings. Carried. Moved by Dr. Molz, seconded by Dr. Horstman, that in the absence of application blanks the verbal application of Dr. W. W. House be accepted, the board of censors to be so notified and that the Doctor later fill out an application blank for our files. Carried. Moved by Dr. Molz, seconded by McAnally that the December meeting be held in Murphysboro the third Thursday in December.

Dr. John Green Jr. of St. Louis held a very interesting lecture clinic on "Ophthalmology." Case 1. Presented by Dr. C. C. Grizzell. Diagnosis, Trachoma with Beginning Pannus. Case 2. Presented by Dr. J. T. McAnally. Diagnosis, Irido-Cyclitis. Dr. Green gave a short talk on the growing necessity for all physicians to have refracting sets in their offices and in this manner keep the "six months oculists" from encroaching upon the field of legitimate medicine. The doctor also spoke of the efforts being put forth in Missouri to establish a society for the prevention of blindness. Moved by Dr. Molz, seconded by Dr. McAnally that a rising vote of thanks be tendered Dr. Green for his services. Carried.

RAY B. ESSICK, Secretary-Treasurer.

KNOX COUNTY.

The annual meeting of the Knox County Medical Society was held in the courthouse at Galesburg, September 22, 1910, with President Davis in the chair. Drs. R. T. Edwards and George E. Maley, both of Galesburg, were admitted to membership. The following officers were elected for 1911: President, D. J. Evans, Galesburg; Vice-President, C. E. Beecher, Gilson; Secretary-Treasurer, G. S. Bower, Galesburg; on Board of Censors, J. E. D. Silcox, Rio. A report on the death of Dr. James Henry was made by Dr. C. B. Ripley. The following program proved exceptionally interesting and instructive: "Colles' Fracture" presented by Dr. W. O'R. Bradley of Galesburg and illustrated with over thirty stereoptican slides, mainly from skiagraphs showing clearly and strikingly the dangers in diagnosis and treatment of this common injury. "Ectopic Pregnancy," by Dr. Cromwell of Oneida. "Backache in Women, Its Cause and Treatment." Dr. J. F. Percy in this paper gave many valuable suggestions, laying particular stress upon cervical and tubal disorders as common factors in this ailment. "Modern Methods of Neurologic Diagnosis." This talk by Dr. L. H. Mettler of Chicago was an eye-opener to many and given careful attention by an audience of about fifty physicians.

That talks and papers well prepared and dealing with practical subjects of interest to the doctor in his every day practice is what our members desire, is evinced by our attendance. Besides about twenty visiting physicians the following members were present: Drs. Baird, Becker, Beecher, Bellwood, Birmingham, Bisson, Bohan, Bower, Bradley, Bryant, Chalmers, Cox, Cromwell, Davis, Evans, Ewing, Finly, Franing, Gray, Hall, Hanawalt, Hunter, Karney, Longbrake, McClanahan, Maley, Matheny, Morris, Nash, Percy, Ripley, Silcox and Stotts. No session of our society has been attended by less than twenty-five and from that up to a hundred. A feature which should not be overlooked in its effect in making our meetings attractive is the regular banquet for the members and their friends. Sixty-five participated in the dinner following this fall session. The post-prandial program, though a surprise to the banqueters, was unusually interesting.

LAKE COUNTY

The meeting of the Lake County Medical Society was held at Dr. Taylor's office, Libertyville, at 7:00 p. m., Nov. 10, 1910. Dr. M. E. Fuller occupied the chair. The secretary's report was read and approved. Under the head of new business the matter of peddling prescriptions was discussed and motion was made and carried that Drs. Turner and Bouton be appointed as a committee to investigate and report on the above matter adding any suggestions as to the best solution of the problem. Dr. E. V. Smith of Libertyville was then elected a member of the society after the approval of the board of censors. The following program was then carried out:

"Contagious Skin Diseases," Dr. J. A. Turner; discussion opened by Dr. F. Ludwig; "Appendicitis," Dr. A. H. Churchill; discussion opened by Dr. W. S. Bellows; "Pneumonia and Bronchitis in Children," Dr. L. B. Jolly. The society then adjourned. The following were present: Drs. Fuller, E. V. Smith, Taylor, Foley, Bellows, Bouton, Tombaugh, Kalowsky, Jolly, Watterson, Turner, Churchill and Ludwig.

W. H. WATTERSON, Secretary.

LA SALLE COUNTY

The La Salle County Medical Society met in semi-annual session at Lostant, October 25, at 1:30 p. m. Upon roll call the following were present: Ayling, Beadles, Burke, Butterfield, Cressman, Crowley, Cook, E. P., Conley, Dieus, Dorsey, Ensign, Etzbaueh, Fullenweider, Fread, Geen, Gould, Guthrie, Hill, Hirsch, Lester, Love, McCord, Milligan, Naumann, Nyswander, Orr, Perisho, Harwood, Peterson, Pike, Purcell, Wilson, Parr, Schoenneshofer, Sexton, Smith, C. H. and Weis. There were about eight or ten physicians present from Marshall-Putnam County by invitation. Owing to the unavoidable absence of secretary Roberts on account of serious illness it was moved and seconded that Dr. E. W. Weis be secretary pro tem. Carried. The minutes of the previous meeting were read and approved. The secretary presented the following applications for membership, which, upon motion, were referred to the board of censors: Drs. A. M. Calvert, Ottawa; J. W. Landgraf, Seneca; O. C. Yoder, Peru; David E. Egan, J. Edward Clark and L. O. Howe, Streator. There being two members absent from the board of censors the president appointed as temporary members of the same Drs. George A. Dieus, Streator and R. Nyswander of La Salle.

The society now turned to the consideration of the program, the first order of which was the President's address. The president stated that inasmuch as this was the semi-annual meeting he had not prepared a formal address and that he had nothing to say either formally or informally at the present time. He then called upon Fullenweider to present his paper on "Typhoid Fever." The essayist took up the subject in general and as he stated in such a way as to provoke discussion. He did not dwell upon the diagnosis, but did dilate more particularly upon the treatment of the same. He stated that he had better success with acetone than with any other drug. He gave the present status of serum therapy. The discussion was led by Ensign and followed by Weis, Burke, Sexton, Leland, Cook and closed by Fullenweider. Weis dwelt particularly upon the differential diagnosis of typhoid fever, estivo-autumnal malaria and paratyphoid. He stated his belief that many of these cases of so-called typhoid fever are in reality the little known paratyphoid.

Burke stated that he had very little experience in the treatment of typhoid, but upon inquiry at the hospital in his town he found that the routine treatment was the use of acetone with uniform cures. On the question of treatment Weis stated that there was no drug that could be considered as a specific and from present knowledge that urotropin is about the only drug that offers any expectation of good for obvious reasons. Cook stated that acetone while enjoying a good reputation in this respect a few years ago has fallen into disrepute. Leland dwelt upon the prophylaxis of the disease.

Dr. H. Douglas Singer now presented his paper on "The Principles of Psycho-Therapy." This paper, which was discussed by Ensign, Cook and several others, will appear in the JOURNAL. Dr. F. Kreissl presented his paper on "Real and So-called Incontinence of Urine and Its Treatment." This paper was an admirable one, very exhaustive and presented some new features in the way of treatment. This paper was discussed by many and was thoroughly enjoyed, and will also be published in the JOURNAL.

Dr. H. Douglas Singer and Professor Kreissl were present through the Lecture Bureau of the Illinois State Medical Society.

It was now moved by Ensign, seconded and carried that the thanks of the society be extended to Kreissl and Singer and the secretary be authorized to reimburse them for their traveling expenses. It is now moved by Ensign, seconded and carried, that this society extend to Dr. A. J. Roberts, the secretary, our sincere sympathy for him in his present illness and our hope for his speedy recovery.

The board of censors now reported favorably upon the applications for membership. It was moved, seconded and carried that the secretary be instructed to cast the vote of the society for the applicants. The same was done, the secretary voted affirmatively for all of them and they were declared elected.

Here the secretary was requested to announce that Dr. William Schoenneshofer, our host, had caused a luncheon to be spread at the hotel for the members of the society. This luncheon proved to be a fine banquet.

It is further moved by Ensign that the thanks of the society be extended to Dr. Schoenneshofer for his hospitality in the entertainment of the society. Carried.

It is moved, seconded and carried that Ottawa shall be the next place of meeting. Adjourned sine die.

E. W. WEIS, Sec. Pro. Tem.

MERCER COUNTY.

The twenty-fifth semi-annual meeting of the Mercer County Medical Society convened in the American Methodist Episcopal Church, at New Windsor, Oct. 11, 1910, at 2 o'clock p. m., Dr. Frank D. Rathbun, vice-president, presiding. After reading and approving minutes of the previous meeting the name of Dr. Oscar Emanuel Grant was proposed for membership. The chair appointed as censors for the ensuing year: Dr. V. A. McClanahan, Viola; Dr. Walter Miles, Viola; Dr. M. H. Smith, North Henderson. The committee on program were: Dr. T. D. Coe, Keithsburg; Dr. Walter Miles, Viola; Dr. Charles C. Hubby, New Windsor. The committee on medical legislation: Dr. A. N. Mackey, Aledo. The scientific program was opened with an address to the public by Dr. Henry B. Hemenway, of Evanston, on "The Duty of the Public in Aiding Local Boards of Health in the Prevention of the Spreading of Contagious Diseases." The address was very ably presented, with plain facts pointing out the importance of strict adherence to the law in aiding the physician to protect the citizens from contagion. Dr. H. M. Smith, of North Henderson, read a splendid paper on "The Hand in Obstetrics," pointing out the danger of the useless introduction into the womb for fear of infection. Dr. V. A. McClanahan, of Viola, presented an interesting paper on "Infantile Paralysis," which brought forth arguments from many members present. The session closed in due form, to convene the second Tuesday in May, 1911.

MONROE COUNTY

The Monroe County Medical Society met in special session October 4, 1910, and adopted resolutions in reference to the death of its President, Dr. H. Heidelberg, and elected the following officers: President, Dr. S. Kohlenbach, Columbia; Vice-Pres., Dr. A. Schellschmidt, New Design; Secretary, Dr. L. Adelsberger.

Waterloo; Treasurer, Dr. J. C. Fufts, Waterloo; Delegate, Dr. J. S. Sennott, Waterloo; Alternate, Dr. J. C. Fufts, Waterloo. Drs. T. H. Trappe and A. T. Eckert of Hecker, were elected members.

OGLE COUNTY.

The Ogle County Medical Society met in regular session at the Public Library, in Polo, Wednesday, September 19, 1910, at 1:30 P. M., with Dr. Maxwell in the Chair. The minutes of the previous meeting were read by the secretary and approved. Roll-call found the following members present: Drs. Alrutz, Atkins, Beard, Brigham, Maxwell, McPherson and Kretzinger. Visitors present: Drs. E. L. Hendricks and T. J. Packard of Lanark, J. E. Porter of Shannon, D. Overholser of Milledgeville, W. L. Karcher of Freeport, L. M. Griffin of Polo, and A. H. Moore and E. S. Murphy of Dixon. The name of Dr. L. M. Griffin of Polo was presented to the society for membership and the Doctor was accepted unanimously.

Dr. Carey Culbertson of Chicago gave "A Talk on Obstetrics." The subject was demonstrated by the assistance of the manikin. The discussion which followed and the questions answered by Dr. Culbertson, made his lecture one of the best ever presented before the Society. Motion made and carried that the secretary be instructed to pay all bills. The motion of Dr. Beard, that the society tender a vote of thanks to Dr. Culbertson for his able talk, carried. No further business to come before the society, the meeting adjourned to meet at Oregon, the third Wednesday in January, 1911.

PIKE COUNTY

The regular October meeting of the Pike County Medical Society was held in Pittsfield, Thursday, Oct. 27, 1910. There was a fair turnout of members and a few visitors. Dr. R. J. Christie, of Quincy, addressed the meeting on "Extra-uterine Pregnancy." The address was instructive and well received by the members. A general discussion followed on this and other subjects. Many interesting cases were reported by different members. A vote of thanks was given Dr. Christie.

WABASH COUNTY.

The Wabash County Medical Society met at Dr. Schneck's Hall, October 25, 1910. The meeting was called to order by Dr. C. E. Gilliatt, President. Minutes of previous meeting were read and approved. There were present Drs. Gilliatt, Schneck, McMurray, McIntosh, E. R. Lescher, R. S. Manley, P. G. Manley, W. H. Robinson, G. W. Reid, L. J. Lescher, Maxwell, Lowenthal, Matina and C. F. Brien; members. And Drs. C. C. Craig, Mt. Carmel, Ill., Drs. Anderson, Blair, Kindle, Zilliack, Alexander, Miller, Hollingsworth, Werty, Cushman, of Princeton, Indiana, and Dr. A. C. Cotton, president of the Illinois State Medical Society.

Dr. Cotton gave an address upon "Organization." Dr. W. W. Blair, Dr. Zilliack and Dr. Miller of Princeton, Indiana, spoke upon the same subject. The chair appointed Drs. Murray, Schneck, and E. R. Lescher a nominating committee; they reported: L. W. Schneck, President, Mt. Carmel; J. J. McIntosh, Vice-President, Allendale; J. B. Maxwell, Secretary, Mt. Carmel; R. S. Manley, Treasurer, Mt. Carmel. The secretary was ordered to pay all bills outstanding. Society adjourned to meet at Courthouse at 7:30, where Dr. A. C. Cotton delivered a fine address upon the subject "The Relation of the Physician to the Public."

At nine o'clock the physicians and their visitors sat down to a banquet. Dr. C. E. Gilliatt, President, acted as Toastmaster. Dr. McMurray responded to "Success in the Practice of Medicine." Dr. W. H. Robinson to "Modern Medicine." Dr. Cushman of Princeton, Indiana, to "Quacks in Medicine." Dr. A. C. Cotton, of Chicago, to "The Relation of the Specialist to the General Practitioner,"

All in all it was a very pleasant and profitable meeting.

WHITE COUNTY

The White County Medical Society met at the offices of Drs. Lehman and Niess, Carmi, Ill., Oct. 20, 1910. The following members were present: Drs. Ellis, Leslie, Staley, Sibley, Lehman, Boyer, Johnson and Niess. The names of Drs. Gann, Lehman, Greene and Johnson were presented for membership and referred to a committee appointed by the chairman. Admitted on report. Several interesting cases were presented by members and thoroughly discussed. A programme committee was named and place and time of next meeting decided to be at Carmi, Ill., Nov. 22, 1910. Motion to adjourn. Carried.

JOHN NIESS, Secretary.

WHITESIDE COUNTY.

A special meeting of the Whiteside County Medical Society was held in Sterling Thursday, October 27, to which meeting were invited members of the Lee County Medical Society, the Sterling and Rock Falls physicians' club and others. There were about forty present and these were well repaid in listening to the following excellent program: Morning session, "Infections of the Nasal Accessory Sinuses" (illustrated by stereopticon views), Dr. Frank W. Broderick, Sterling. Discussion. Reports of Clinical cases.

At 12:30 o'clock; dinner, given by Sterling and Rock Falls Physicians' Club to visiting physicians.

Afternoon session: "Some Recent Advances in Neurological Diagnosis," Dr. L. Harrison Mettler, Chicago. Discussion. "Painful Affections of the Feet," Dr. John L. Porter, Chicago. Discussion.

Dr. Broderick in his paper first reviewed the anatomy, presenting sections taken from different angles of the head. Then taking up each sinus he clearly explained the symptomatology, differential diagnosis and treatment of the different infections and malformations. This was one of the most practical and interesting papers ever read before the society, especially so to the general practitioner was his clear and original diagnosis. Then several clinical cases were cited.

An hour was pleasantly spent while being entertained by the Sterling and Rock Falls Physicians' Club.

Dr. L. Harrison Mettler of Chicago explained that in the short space of time given him to prepare he had not had time to write a paper, but he held the closest attention of every one for over an hour touching on the many changes that had taken place in neurological diagnosis and hinting at many more about to occur in the future along lines of clinical neurology. He also spoke of our advance in knowledge of physiologic psychology. He noted the change in method of diagnosis from the grouping together of symptoms—symptomatic medicine to the cellular pathology of Virchow, and the error of basing diagnoses on post-mortem manifestations and findings, quoting the findings of Cabot who in one thousand autopsies found 75 per cent. of mistakes as compared with the clinical findings. In locomotor ataxia all the symptoms as found in making a symptomatic diagnosis are found in other diseases; not so by the physiologic method.

Sensory manifestations due to severe infections were interpreted by physiologic analysis. Thus posterior spinal sclerosis, a disease of the cortex. The differential diagnosis between multiple neuritis and tabes dorsalis is not difficult by the physiologic method.

It will be necessary for us to study over the entire nervous system, taking the neuron as a unit. Diseases of the pyramidal tracks in spine are due to cortex brain disease. Little's disease is due to disease of the cortex. Prognosis is good in true Little's disease as the neurons are not mature and thus there is possibility of their recovering, which is not the case in pseudo Little's disease.

Another line of advancement is that of psycho-analysis in insanity; the psycho-analysis of each individual patient. Hysteria is due to unstable complexes and the unstable ideas built up by this condition must be treated by

psychotherapy. It has been recently discovered that all motor centers are in front of Rolandic fissure, none behind. This is a bare outline of a few of the facts that Dr. Mettler mentioned.

Dr. John L. Porter, of Chicago, spoke for over an hour on "Painful Affections of the Feet." He first described the foot and its function, saying that anything interfering with that, caused awkwardness and pain. Comparison made between those who wear shoes and the animals and Indian gait, the latter's toes leaving the ground all at the same time. He divided the forms of flatfoot into three divisions: weak foot, flat foot and rigid foot. In the first division there seemingly is little the matter except tenderness on the scaphoid. The characteristics of all form of flat foot is pronation and rotation of tarsus.

In group two the foot looks flat, but can be supinated, painful in the morning due to a partial return of the arch during night; with the tarsus on ground there is less pain. Treatment of simple weak feet consists in support by strapping and patient off feet two weeks. He then orders a straight-lasting shoe with a specially made heel of his own make, the purpose of which is to transfer the weight from the heel to the outer side of the foot. Exercise in stocking feet by rising on toes twenty-five times night and morning and also advises to walk pigeon-toed. Footplates are useful, but Dr. Porter is using them less and less.

In the second class, or flat foot, if the foot can be supinated it can be cured. He uses a plaster of Paris dressing in supinated position for ten days to two weeks, then makes a cast of the foot and from this a model. On the model he marks with a pencil, up to the scaphoid, the shape of plate desired. All cases do not need plates. Manufactured plates do good for a time, but do not fit. He sometimes uses brass or steel, but usually German silver. Patients are taught to walk pigeon-toed and exercise. Those under forty years of age are usually cured, those over may have to wear plates always.

In rigid flat foot the peroneal muscles are divided and the foot moulded over a block until supinated; sometimes necessary to use a wrench. The tarsus are lifted into position and a plaster of Paris dressing applied. After this a plate is always worn. Grip or any disease may cause flat foot due to debility and toxemia; other causes are traumatism, rapid increase in weight. Exostoses may form on calcaneum in gonorrheal infections, causing pain by pressure on plantar fascia. Treatment is by removal and dressing as in primary flat foot.

Metatarsalgia is caused by high shoes, the first and fifth toes are never involved, but the heads of other metatarsal bones often pinched out of place. Treatment: a model of plaster as in flat foot from which a plate is made and tight shoes with low heels worn.

A general discussion followed.

A vote of thanks was extended to the essayists and also to the Sterling and Rock Falls Physicians' Club. Adjourned.

E. P. SULLIVAN, Secretary.

NEWS OF THE STATE

PERSONAL

Dr. S. S. Wilcon, Charleston, was seriously injured by falling from his carriage recently.

Dr. Alexander F. Stewart, Oneida, resumed practice after undergoing an operation at Angustana Hospital, Chicago.

NEWS

—Dr. Fred C. Zapffe, 100 State street, Chicago, has severed his connection with the Chicago hospital.

—Dr. Aloys Heinen has returned from Berlin, Germany, and is located at 664 Wellington avenue, Chicago.

—Dr. John R. Harger announces that he has opened an office in the Columbus Memorial Building, 103 State street, Chicago.

—Dr. A. A. Mertz of Springfield has purchased the office equipment and stock of drugs belonging to the estate of the late Dr. J. M. Duncan of Pawnee.

—Dr. Harry S. Gradle, late volunteer assistant at Elsehnig's Eye Clinic at Prague, has associated himself in practice with his father, Dr. Henry Gradle, of Chicago.

—The Federated Woman's Clubs of Chicago, at a meeting October 27, were addressed by Dr. Rose D. Howe on "The Moral Problems of Education," and passed resolutions advocating a scientific course of anatomy and physiology in the public schools under the instruction of regularly licensed physicians.

—A meeting of the physicians of the state was held at the University Club, Chicago, October 27, and an organization perfected for the study of the diseases of the insane. Meetings will be held from time to time in different cities. Representatives of the medical staffs of the state hospitals attended the meeting.

—The Council of the Chicago Medical Society on the evening of October 8, paid a high tribute to the combined names of Fenger and Senn, by instituting the Fenger-Senn Memorial Lecture to be given annually under the auspices of the Chicago Medical Society; the Board of Trustees to pay the sum of \$200 for the same.

—At the annual election of officers of the Graham Hospital, Canton, Dr. Paul S. Scholes was elected president; Dr. Harrison C. Putnam, vice-president, and Dr. Charles N. Allison, secretary. The retiring members were Drs. Willis T. Zeigler, James E. Coleman, and Leroy Chapin. According to the annual report the hospital has had a successful year.

—Commencing next year the University of Minnesota will require every student to take a five year instead of a four year course. The fifth,

or final year is to be spent by each and every would-be doctor in a hospital as an interne. No certificate of graduation will be awarded until the aspirant for it has proved his qualification to be a physician by actual practice as well as theory.

—Dr. J. T. Lamping formerly president of the Rock Island Medical Society, and prominent at Moline, has been unfortunate in the United States District Court. He was arrested by Federal officers on a charge of sending threatening letters. The Rock Island County Medical Society as soon as this charge was made, met and unanimously passed a vote of confidence in his truth and integrity.

—At a meeting of the Chicago Surgical Society at the University Club, October 25, which was the occasion of the annual dinner, the following officers were installed: Dr. Jacob Frank, president, succeeding Dr. Arthur Dean Bevan; vice-president, Dr. P. Charles Davison; secretary, Dr. Frederick A. Besley; treasurer, Dr. Dean D. Lewis, and members of the council, Drs. Albert J. Ochsner and A. E. Halstead. The first scientific meeting of the year will be held November 10.

—The erection of a Municipal Tuberculosis Sanatorium in Springfield seems to be an assured fact. Mayor McCaskrin has appointed as trustees: Walter A. Rosenfield, two years; Dr. Joseph DeSilva, one year; Dr. A. N. Mueller, three years. The sanatorium is to be supported by a levy of a one-mill tax. The mayor announced that the first year's levy, the return which is now available, will bring \$5,845. The trustees are to serve without compensation. Of course there will be paid attendants.

—At the meeting of the Conference of Jewish Women's Organizations, October 27, Dr. Alice B. Hamilton advocated the abolishment of midwives because they are not properly trained. She said that out of 500 licensed midwives in Chicago, scarcely 30 per cent. are capable and efficient, and one-third are willing to take criminal cases. In this country the license issued to a midwife means nothing. The practice is scarcely controlled at all. We give them the stamp of approval which only deceives those who do not understand.

—The Chicago Medical Health Officers' Association, composed of ninety-five graduate physicians employed in the City Health Department, was organized October 28. The following officers were elected: president, Dr. John A. Riley; vice-president, Dr. F. S. Windell; secretary, Dr. A. H. Jones, and treasurer, Dr. W. H. Falkenstein. The meeting deplored the small salaries paid city health officers, who they assert are the poorest paid employees under the civil service. They also pledged hearty support to Health Commissioner Evans in his fight against contagious diseases.

—*Physiologic Therapeutics*, the new journal published by Dr. Henry R. Harrower of Chicago, will celebrate the New Year with a special double number. We learn that several thousand extra copies will be printed and sent with the season's greetings to such physicians as may be interested in seeing this able exponent of the progress in the non-medicinal methods of treatment. From the advance program which we have received it would seem that this number will be an especially fine one. Those of our read-

ers who desire a copy should send a postal request to Dr. H. R. Harrower, Park Ridge, Ill.

—The State Board of Health won a victory October 28, when the Supreme Court, in the case of the Board of Health vs. Wilson, sustained the contention made by the board that an itinerant vender who sold medicine accompanied by a circular exploiting the virtues of the remedy and giving directions for its use, “professed to the public to cure or treat disease,” even though he remained mute. The court also held that the State Board of Health is clothed with broad discretionary powers and that the medical practice act is not subject to the objection that it confers legislative or judicial powers on the State Board of Health. Further the Court emphasized its previous rulings that the regulation of the practice of medicine is clearly within the police power of the state.

—At the meeting of the Illinois State Conference of Charities and correction at Galesburg, October 25, that body recommended, among other things, that two state penitentiaries and the reformatory be placed under the supervision of the state board of administration, that political qualifications be eliminated in appointments, and that civil service be established in the several institutions; also that short terms and small salaries be abolished; that the legislature enact an adult probation law, increase the number of parole agents, transform Cook County Hospital for the Insane to a state hospital, establish a true psychopathic hospital in Chicago, and a state inebriate institute, appoint a commission to take the census of the blind in Illinois, furnish more experienced care for the education of the feeble-minded, and furnish two state schools for delinquent boys and girls; that infant mortality be studied in Illinois through a committee; and that a state board of children’s guardians be provided for by law.

ARMY MEDICAL CORPS EXAMINATIONS — The Surgeon General of the Army announces that the first of the preliminary examinations for the appointment of first lieutenants in the Army Medical Corps for the year 1911 will be held Jan. 16, 1911, at points to be hereafter designated. Full information concerning the examination can be procured on application to the “Surgeon General, U. S. Army, Washington, D. C.” The essential requirements to securing an invitation are that the applicant shall be a citizen of the United States, shall be between 22 and 30 years of age, a graduate of a medical school legally authorized to confer the degree of doctor of medicine, shall be of good moral character and habits, and shall have had at least one year’s hospital training or its equivalent in practice after graduation. The examinations will be held concurrently throughout the country at points where boards can be convened. Due consideration will be given to localities from which applications are received, in order to lessen the traveling expenses of applicants as much as possible. The examination in subjects of general education (mathematics, geography, history, general literature, and Latin) may be omitted in the case of applicants holding diplomas from

reputable literary or scientific colleges, normal schools or high schools, or graduates of medical schools which require an entrance examination satisfactory to the faculty of the Army Medical School. In order to perfect all necessary arrangements for the examination, applications must be complete and in possession of the Adjutant General on or before Jan. 2, 1911. Early attention is therefore enjoined on all intending applicants. There are at present seventy-six vacancies in the Medical Corps of the Army.

MEDICAL SOCIETY NOTES AND NEWS ITEMS

From the Madison County Doctor

Dr. T. P. Yerkes, of Upper Alton, is recovering nicely from a surgical operation, performed by Dr. Mayo at Rochester, Minnesota.

Dr. John H. Wedig of Granite City, was married November 30th, to Miss Della Strackeljahn of Sand Prairie.

Dr. Rose Russell, superintendent at the Lutheran Hospital at Granite City, has tendered her resignation to take effect December first.

Dr. P. S. Wiedman is the oldest practitioner in Edwardsville and Madison County. Dr. Wiedman was born in 1826, graduated from Albany Medical College in 1855.

The Southern Illinois Medical Society held a very interesting meeting at Centralia on November 3rd and 4th. A number of papers, of unusual interest and merit were read. The following officers were elected; President, E. W. Fiegenbaum, Edwardsville; Vice-President, Andy Hall, Mt. Vernon; Secretary, C. W. Lillie, East St. Louis; treasurer, A. J. Telford, Olney. The next annual meeting will be held at Mt. Vernon. The Annual report of the Madison County Medical Society shows 82 members in good standing, a net increase of eleven members for the year; about thirty-five doctors of the county are not yet members.

An important link in the chain of organization is your state delegate. Time was when this office was merely a bouquet thrown at some member who happened to be sitting around, at an annual election. Without any special fitness for the office, and without even knowing whether he intended to go to the state meeting, he was elected state delegate for two years. This time is past, and our delegate now ought to be one of your best business men, who knows how and when to fight on the floor of the House of Delegates, when a question comes up that vitally affects your best interest. Of late years this has become a very important department of our state body, as all questions of policy and government, all questions of officers are threshed out and decided in the House of Delegates. You will see therefore, how necessary it is for you to be represented by the best man you can send there. For instance, at the next meeting of the State Society, the proposition to make the office of state president a salaried office for a term of four years, will come up. This will be decided by the delegates. How are you going to vote on the question? Is it wise or otherwise? Your voice ought to be heard on this most important matter, your opinion ought to be presented and considered.

MEDICAL SOCIETY NOTES

The Williamson County Medical Society met in Marion October 25. Dr. D. S. Boles of Herrin was elected president; Dr. B. F. Crain, of Cartersville, vice-president; Dr. J. G. Parmley was re-elected secretary. Board of censors, Dr. G. H. Galbreth of Clifford, Dr. G. W. Gore of Johnston City, Dr. D. D. Hartwell of Marion. The society has a membership of sixty-one. Drs. J. P. Huff of Chamness and Dr. J. M. Hancock, Herrin, were elected to membership.

NEW INCORPORATIONS

Union Park Hospital, Chicago; capital \$18,000; maintain hospital, dispensary, and training school for nurses; incorporators, Morris Ives, Charles C. Bodensstab, Ralph F. Stern.

REMOVALS

Dr. G. L. Cousineau has removed to Yacolt, Wash.
Dr. H. N. Barth of Chicago has removed to Rockford.
Dr. W. W. Kuntz of Barry has removed to New Salem.
Dr. W. F. Hager of Sparta has removed to Assumption.
Dr. H. W. Wolfe has removed from DuBois to Tamaroa.
Dr. E. E. McCoy of Flanagan has removed to Monmouth.
Dr. J. B. Liston has removed from Woodburn to Shipman.
Dr. S. C. Niles of Rockford has removed to Indianapolis, Ind.
Dr. Benjamin Hudson of Palmyra has opened an office at Pawnee.
Dr. Gustav J. Berger of Chicago has removed to San Francisco, Cal.
Dr. George G. McConnell of Chicago has removed to Indianapolis, Ind.
Dr. S. B. Wright of Sullivan has removed to 3404 Indiana avenue, Chicago.
Dr. A. Clarence Schoch has removed from Coldwater, Mich., to 1039 North Clark street, Chicago.

MARRIAGES

OTTO J. RABE, M.D., to Miss Mildred C. Smith, both of Chicago, October 20.

A. T. GIBSON, M.D., to Miss Josephine Shull, both of Morrisonville, November 6.

FREDERIC ATWOOD BESLEY, M.D., to Mrs. Myra E. Busey, both of Chicago, October 6.

WILLIAM DAY CHAPMAN, M.D., Silvis, to Miss Bessie Wayne of Orion, November 10.

RICHARD A. ROACH, M.D., to Miss Anna Katherine Merle, both of Chicago, October 26.

JAMES HARTZELL LANGSTAFF, M.D., to Miss Aldine Merit, both of Fairbury, October 22.

GARLAND DIX SCOTT, M.D., Chicago, to Miss Hester Crowder, of Sullivan, Ind., September 13.

DANIEL BERNARD HAYDEN, M.D., Chicago, to Miss Julia Howard of Farmer City, Ill., October 8.

LEMUEL BYRD SHORT, M.D., East St. Louis, Ill., to Miss Josephine Hill of Fillmore, Ill., recently.

BEDFORD F. COOP, M.D., Greenville, Ill., to Miss Ethel Reed of Highland, Ill., at East St. Louis, October 4.

JAMES F. CHURCHILL, M.D., Chicago, to Miss Virginia Busey of Urbana, Ill., at Champaign, October 8.

LEE COLLINS HARLAN, M.D., Madison, Ill., to Miss Margaret Groves of Bunker Hill, Ill., in St. Louis, October 12.

THOMAS P. GUILFOYLE, M.D., Cherry, Ill., to Miss Kathleen Helen Dwyer of Arlington, Ill., at Peoria, Ill., September 29.

DEATHS

WILLARD R. HILLEGAS, M.D., Albany, N. Y., Medical College, 1882; died at his home in Chicago, September 21, from angina pectoris.

SHELTON LAW, M.D., Baltimore School of Medicine, 1897; died at his home in Springfield, October 22, from sciatic rheumatism, aged 38.

JOHN ALBERT JONES, M.D., Tulane University, New Orleans, 1873; of Springfield, Ill., died recently from mental disease, at New Orleans, aged 62.

JAMES BAKER, M.D., Rush Medical College, 1869; physician of Fulton county; died at his home in Table Grove, November 3, from tuberculosis, aged 65.

JOHN F. MCKINNEY, M.D., Eclectic Medical Institute, Cincinnati, 1876; died suddenly at his home in Arcola, Ill., September 14, from heart disease, aged 63.

JOHN P. CLOYD, M.D., Rush Medical College, 1869; of Georgetown; died at the home of his daughter in that place, October 29, from senile debility, aged 72.

JESSE WALTER EVANS, M.D., Rush Medical College, Chicago, 1873; a veteran of the Civil War; died at his home in Varna, October 14, from pneumonia, aged 73.

LEWIS WILLIAM KREIGER, M.D., Jefferson Medical College 1892; of Peoria; died in St. Francis Hospital in that city, October 23, from cerebral hemorrhage, aged 51.

WILLIAM M. ROBERTS, M.D., Northwestern University Medical School, Chicago, 1893; of St. David; died in Graham Hospital, Canton, November 8, from heart disease, aged 45.

OLIVER CROMWELL KIRBY, M. D., College of Physicians and Surgeons, Chicago, 1909; of Avondale, Chicago; died in the University Hospital, Chicago, October 29, from typhoid fever, aged 25.

GEORGE STEURNAGEL, M.D., Michigan College of Medicine, Detroit, 1883; formerly a member of the American Medical Association; died at his home in Chicago, October 9, from paresis, aged 57.

JONATHAN WILSON SHULL (years of practice Ill., 1878); for fifty years a practitioner of Greenup; a veteran of the Civil War; died at his home in Johnstown, October 4, from cancer of the liver, aged 77.

JOSEPH FRANK GEENAN, M.D., Rush Medical College, 1893; formerly of Toluca, for four years coroner of Marshall county; died at his home in Beloit, Kan., October 20, from disease of the kidney, aged 42.

JOSEPH FLETCHER, M.D., Washington University, St. Louis, 1867; formerly a member of the American Medical Association; died at his home near Mendon, Ill., September 26, from paralysis agitans, aged 70.

ADOLPH BERGER, M.D., Humboldt Medical College, St. Louis 1862; a veteran of the Civil War and for thirty years a member of the Board of Education of Lebanon, died at his home in that city, November 10, aged 89.

ORIS KINGSBURY GRIFFITH, M.D., Eclectic Medical Institute, Cincinnati, 1861; a pioneer practitioner of Huntley, Ill., president of the Village Board and school and township trustee; died at his home, September 24, aged 74.

HENRY JAYNE, M.D., University of Michigan, Ann Arbor, 1865; a veteran of the Civil War; mayor of Taylorville, Ill., from 1891 to 1893, and for four years postmaster of that city; died at his home, September 10, from nephritis, aged 73.

ELERA JOHN ABBOTT, M.D., Chicago Homeopathic Medical College, 1887; of Chicago; a specialist on the diseases of the eye, ear, nose and throat; died in Hahnemann Hospital, October 16, from peritonitis, following a surgical operation, aged 51.

NELSON G. COFFIN, M.D., Medical College of Ohio, Cincinnati, 1847; Illinois Army Board, 1862; assistant surgeon of the One Hundred and Seventh Illinois Volunteer Infantry during the Civil War; died at his home in Monticello November 1, aged 90.

ORVILLE B. BLACKMAN, M.D., Hahnemann Medical College, Chicago, 1873, a member of the Illinois State Medical Society, and of the staff of the Dixon Public Hospital; died at the home of his daughter in Malvern, Pa., October 15, from cerebral hemorrhage, aged 58.

LIZZIE WILD CHARLES, M.D., prominent as an organizer of branches of the Audubon Society in Illinois, and in the work of woman's clubs and schools; for two terms president of the Austin Woman's Club; died at her home in Austin, October 6, from pneumonia, aged 67.

JAMES McCLELLAND DUNCAN, M.D., Miami Medical College, Cincinnati, 1892, a member of the American Medical Association; president of the school board of Pawnee, and for four years president of the village; died at his home October 16, from typhoid fever, aged 48.

SAMUEL W. EDMONDS, M.D., of Alexander, one of Morgan county's oldest physicians, died November 1 of typhoid fever, aged 70 years. He was born in Cornell, England, in 1840. He graduated at Ann Arbor. Dr. Edmonds during the Civil War served in the hospital corps.

AUGUST BERG, M.D., University of Berlin, Germany; for many years a practitioner of St. Louis; died at the home of his daughter in Collins-

ville, Ill., September 18, from the effects of a gunshot wound of the head, believed to have been self inflicted with suicidal intent, aged 74.

WILLIAM WATSON GALEY, M.D., Philadelphia College of Medicine and Surgery, 1863; of Ashland, Ill.; for many years a member of the Illinois State Medical Society; a medical cadet during the Civil War; died in Maplewood Sanitarium, Jacksonville, Ill., September 27, from uremia, following chronic nephritis, aged 68.

THOMAS EVERETT ALSOP, M.D., Medical College of Virginia, Richmond, 1887; a member of the Illinois State Medical Society, and formerly president of the Clinton County Medical Society, and Clinton County Board of United States Pension Examiners, coroner and member of the Board of Health of Clinton county, and physician to the County Almshouse; died at his home in Carlyle, September 22, from heart disease, aged 50.

JAMES HENRY, M.D. of Galesburg, died Aug. 1, 1910, aged nearly 70. Dr. Henry was born near the Giant's Causeway, North Ireland, of Scotch-Irish parentage. At 20 years of age he came to America. Served through the Civil War, coming out with the rank of Major. He graduated at Bellevue in 1870, and had practiced in Columbus, Adams county, and at La Harpe for twenty-nine years. His wife, three sons and a brother, Dr. S. Henry of Camp Point, and a sister survive. Dr. Henry was stricken with paralysis five years ago, and since that time has resided an invalid at Galesburg. The doctor had always taken a prominent part in the civic affairs of La Harpe.

J. I. WILKINS, M.D., of Tiskilwa, died Oct. 19, 1910, aged 83, of shock following fracture of the hip. Dr. Wilkins was born August, 1827, in Dublin, Ireland, the son of an attorney. He received his medical education at the Royal College of Surgeons, Trinity College, and "Rotunda" Hospital, at which place he graduated. Following this he practiced a short time in Ireland, then became a surgeon of a passenger vessel, finally locating in 1852 in Bureau county, and in 1857 at Tiskilwa, where he practiced until his health failed, with the exception of a period of several years in the Fourteenth Illinois Cavalry, as assistant surgeon. He was for six months in Libby Prison. One son, a druggist of Tiskilwa, survives. Funeral services were held October 22, at St. Jude's church, and the interment in Mt. Bloom cemetery was in charge of the Masonic Brethren.

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